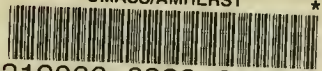


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THE
GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. XXXVI.—THIRD SERIES.

JULY TO DECEMBER, 1904.

LONDON:
41, WELLINGTON STREET, COVENT GARDEN, W.C.
1904.

C
Per
G 166July-Dec
1904

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NOTES FROM COUNTY CORK.

BELGROVE.

DURING a few days' visit to the southern shores of Ireland, I had the pleasure of inspecting three most interesting gardens—namely, Mr. W. E. Gumbleton's, at Belgrove; Lord Barrymore's, at Fota; and Mr. R. H. Beamish's, at Ashbourne. Of the two first I propose to give a few particulars, which will, however, by no means be exhaustive, as in an article of limited length many rare and valuable subjects must necessarily be omitted. The first garden is familiar, by repute at least, to every reader of the Horticultural Press, for Mr. Gumbleton has for many years made a speciality of testing new flowering shrubs and plants, and, his predilection being well known to the leading nurserymen both at home and abroad, rarities generally find their earliest sanctuary in the British Isles in his grounds, where many of the new introductions have flowered for the first time. Belgrove is beautifully situated on a slope running down to one of the numerous creeks of Queenstown Harbour, and is rich in fine trees, which render the spot an ideal sylvan retreat.

In the conservatory I saw, amongst many other rare things, the new *Sophora viciifolia* (fig. 3, p. 3), closely allied to *S. Moorcroftiana*, from the Himalayas, said to be hardy, a shrub bearing bluish-white Pea-like flowers; *Verbascum simplex*, of shrubby habit, also new, throwing up three flower-spikes 4 feet in height (fig. 2, p. 2); *Calandrinia Howelli*, *Arctotis decurrens*, said to be the only plant

of the species in Europe; *Helichrysum Volkensii*, which I tried unsuccessfully in the open in South Devon; and a splendid plant of *H. Gulielmi* var., 5 feet in height and 2 feet 6 inches through, with glistening white flowers. This, Mr. Gumbleton thinks, is a distinct species (it is certainly quite unlike the type), or that if it is held to be a variety, it should be named *Meyeri*, after the introducer, Herr Leopold Meyer.

finest of the hybrid *Gazanias*. *Campanula Vidalii* (which flowered well with me in South Devon in the open, vide illustration *Gardeners' Chronicle*, vol. xxxiv., p. 330), *Calla Elliotiana*, species of shrubby *Clematis*, new *Salvias*, the best *Pentstemons*, all the named varieties of *Montbretia* and species of *Hemerocallis*, embracing the four fine hybrids of Herr Sprenger, fully described in *Gardeners' Chronicle*, August 15, 1903; *Parthenope*



FIG. 1.—IRIS GRACILIPES (JAPAN): FLOWER LILAC. FALLS WITH A YELLOW CREST.
(From Mr. Gumbleton's Garden.)

In the level garden stretching from the house many beds are cut on the lawn, while on one side is a wide, wall-backed border. Several of the beds are devoted to the best hybrids of different families of plants; thus, one was filled with all the latest *Heucheras*, of which *H. Pluie de Feu* was especially bright; another bed contained the best varieties of *Chrysanthemum maximum*, together with the new *Shasta Daisies*, named *Alaska*, *California*, and *Westralia*, just sent out; another was filled with the

Baroni, *P. ochroleuca*, and *P. Muelleri*, each occupied separate beds, thus affording the opportunity of comparing the merits of the different varieties or species at close quarters. Several of the beds were edged with the double white *Colchicum*, still a rare and expensive bulb; *Achillea linguata* var. *Buglossi* was also in the border.

Other noteworthy plants in this garden were the double yellow and orange *Meconopsis cambrica*, *Aconitum volubile*, *Potentilla argrophylla*, *Rhazya orientalis* with

blue flowers, *Incarvillea grandiflora* and the still newer *I. compacta*, *Anchusa Barrelieri* variegata, *Mertensia elongata*, *Cimicifuga dahurica*, the new shrub *Crossosoma californicum*, *Alfredia cernua*, *Erysimum brachycarpum*, a fine specimen of *Campanula vesicolor*, *Centaurea tauromenitana*, *Senecio rotundifolia*, a healthy bush of *Olearia insignis* just coming into bloom, *Lobelia rhynchoptala*, one of the Tree-Lobelias from North America, fully described and figured in *Gardeners' Chronicle*, June 29, 1901, p. 418; the pretty little *Iris gracilipes* (fig. 1, p. 1), a fine bush of *Lavatera assurgentifolia*, *Campanula michauxoides* 5 feet high, a yellow *Eremurus* from Beluchistan, which has been identified as *E. Bungei* var. *præcox*; new species of *Verbascum*, including *V. densiflorum*, a fine orange, and *V. Wiedemanni* with large purplish flowers; while trained against the wall, which was prettily enamelled with *Erinus alpinus* and its white and pink forms, was a fine plant of *Crinodendron Hookeri* (*Tricuspidaria dependens*), rich crimson with countless blossoms, in front of which was a large clump of the striking *Anemone Fannini* from South Africa, with giant leaves and great white flowers over 4 inches across. In a corner of this garden, against the wall, was a large shrub of the South African *Freylinia cestroides*, about 8 feet in height, which, however, has never flowered.

In the greenhouses was a fine collection of the best tuberous Begonias, and I was shown a plant of the new *Prenia lutea*. *Disa grandiflora* was present in quantity, and was particularly well grown; and amongst other plants I noticed *Ipomœa leptophylla*, a bush *Convolvulus*, which forms huge tubers sometimes weighing as much as 100 lb., and *Psychotria capensis*.

Of Water-Lilies Mr. Gumbleton possesses a large collection, comprising all the best species and hybrids. These are grown in brick tanks elevated above the level of the ground, so that the splendid blossoms are close to the eye.

In a trial-bed near the greenhouses I saw many new or rarely grown plants, a few of which were *Anchusa capensis*, the herbaceous *Sophora flavescens*, *Patrinia villosa*, an orange-flowered variety of *Linum flavum*, *L. salsoloides*, *Senecio chrysanthemoides*, *Illicium Henryi*, *Stanleya pinnatifida*, *Potentilla Salesoviana*, *Cacalia tuberosa*, *Coton-easter Fontanesii*, *Anaphalis cinnamomea*, *Adenocarpus anagrus*, *A. commutatus*, *Campanula laciniata*, and *Vernonia Sprengeri*.

Ostrya magnifica was growing strongly and throwing up a number of flower-stems. *Feijoa Sellowiana* was 6 feet in height and the same in diameter; the fine *Buddleia Colvillei*, which was the first of its species to flower in the British Isles, was about 20 by 20 feet, and was showing many bud clusters; *Carpenteria californica* was about 7 feet high, and had a far more healthy appearance than the majority of these plants in the South-west; a fine *Eucryphia pinnatifolia* was 8 feet in height, and close by was a good specimen of the rarely seen *E. cordata*, very distinct in its foliage. *Plagianthus Lyalli* was doing well, as was the rare *Ostryopsis Davidiana*. There were large collections of the newer Mock Oranges (*Philadelphus*), *Diervillas* or *Weigelas*, and *Deutzias*, *D. gracilis eximia* among the last-named being very beautiful.

On the sunny side of a lofty wall bounding the kitchen-garden many flowering shrubs and climbers were flourishing. *Habrothamnus sanguinea* and others of the same genus were in full flower; *Wistaria multi-juga* was finer than I have ever seen it in this country, covering some 30 feet in length of the high wall with thousands of its long flower-racemes fully 2 feet in length, the upper blossoms of which had just expanded; this plant has before now ripened seed. Close to it was growing the common *W. sinensis* with short but deeper-coloured

its white flowers freely; *Exochorda Alberti macrantha*, *Davidia involucrata*, *Veronica Lindsayi*, *Hamamelis mollis*, *Olearia moschata* and *O. nummularifolia*, among many others of the race; the bush *Lonicera Mackii* and *L. Alberti*, *Cladastis lutea*, *Adenocarpus decorticans*, and *Coprosma acerosa* with pale blue fruits. Those who are inclined to specialise in the genera *Kniphofia* and *Cortaderia* would gain an object-lesson at Belgrove, for of the former the collection embraces considerably over forty species and varieties, while of the latter all the known forms are grown.

The well cropped and cultivated kitchen-garden contains, among other things, Luther Burbank's very early or winter-fruited crimson-stalked Rhubarb. Under the genial guidance of their owner many other rare and beautiful subjects were inspected in this most interesting garden, of which lack of space prohibits mention.

FOTA.

Fota Island, on which is situated the Irish residence of Lord Barrymore, is renowned for its fine collection of Conifers and other trees, many of which are exceptionally handsome specimens; while flowering shrubs, hardy Palms, Bamboos, and Tree-Ferns are also largely grown. A beautiful specimen of *Pinus Montezumæ*, 35 feet in height, is one of the gems of the collection. Good examples of this are very rare in England, but there are fine ones at Tregothnan and Menabilly. *Abies grandis*, from California, was 70 feet in height, and the Japanese *A. firma*, 25 feet. A large example of the Mexican *Pinus patula* was about 60 feet high, but lost several of its branches in the gale of September 20 last year. That storm also levelled the finest specimen of *Cupressus macrocarpa* (which had a girth of over 12 feet) to the ground. The Mexican Sacred Fir, *Pinus religiosa*, is 60 feet in height, and a young *Cladastis tinctoria* is 12 feet high. An unusually large specimen of *Parottia persica* had a branch-spread of over 30 feet. This must be a marvellous sight when in its autumnal glory.

I noticed three bushes of *Edwardsia* (*Sophora*) *grandiflora* standing in the open, far away from any walls. All were covered with buds, the earliest of which were just expanding; and on the largest, 12 feet in height, hundreds of last year's seed-pods were hanging. A fine *Embothrium coccineum*, 25 feet in height and the same in diameter, was at its best, being a blaze of vermilion. Several suckers had sprung up around the tree, and these were flowering, though not so freely. *Cornus capitata*, better known as *Benthamia fragifera*, is 40 feet in height, with a like branch-spread; *Fagus Cunninghami*, 40 feet, and *Tsuga Brunoniana* the same height. *Magnolia Campbelli* is fully 30 feet in height, but is badly crowded by other trees; and *M. glauca* is 15 feet in height. Here I met with the finest specimen of *Berberis nepalensis* I have seen, 12 feet in height and 18 feet through. *Citris trifoliata* in the open is flowering abundantly, which shows that a wall is not absolutely indispensable to induce it to bloom in warm localities.

An exceedingly large bush of *Collettia horrida* in full flower was almost 20 feet in height and as much through, while *C. cruciata* was 8 feet high and 15 feet in diameter. The latter always flowers in

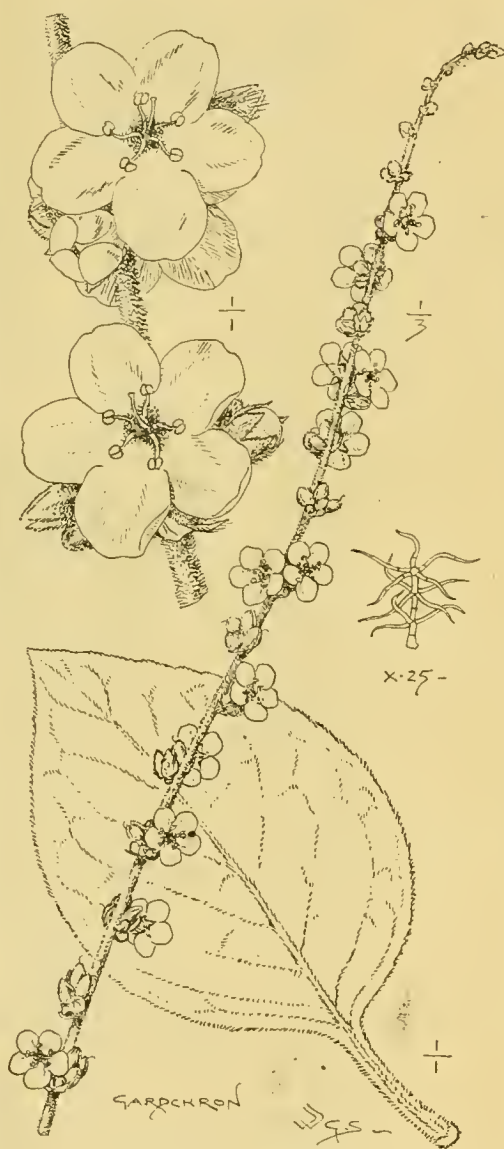


FIG. 2.—*VERBASCUM SIMPLEX*.
(From Mr. Gumbleton's Garden. See p. 1.)

bloom-racemes, which were more advanced. Mr. Gumbleton also possesses the pink-flowered form of *Wistaria multi-juga* known as *rosea*, but this plant has shown no flower up to the present. Of the many *Magnolias*, *M. Watsoni* was coming into bloom, and I was shown a symmetrical tree of *M. Campbelli* about 25 feet in height, standing in an isolated position, which last year bore 147 blossoms. Other shrubs and trees included a fine *Juglans ailanthifolia*, 30 feet in height, with very ornamental foliage; an immense shrub of *Daphniphyllum glaucescens* about 20 feet in height and as much in diameter, probably the largest specimen in the British Isles; *Buddleia asiatica*, bearing

November at the mouth of the "Dart," which is curious, as it has been proved to be merely a form of *C. horrida* that was in bloom in Ireland at the end of May. Other shrubs and trees that I noticed were *Lomatia ferruginea*, with foliage very like that of *Grevillea robusta*; *Aphananthe aspera*, *Davidia involucrata*, and a small example of the Parasol Fir, *Sciadopitys verticillata*. Amongst the plants clothing a high wall were *Clianthus puniceus* in full flower, *Asparagus deflexus* covering a space 10 feet square, *Trachelospermum jasminoides*, and *Coronilla glauca*, that had rooted into the mortar beneath the coping from its highest shoots. There were fine groups of *Trachycarpus Fortunei*, one isolated specimen being well over 20 feet in height; and I saw two healthy plants of *Phoenix senegalensis* 7 feet in height. The Tree Ferns are grown in a

plants had been grown some years at Gunnersbury House, and Mr. Hudson had raised a few seedlings of them. In view of the fact that most growers have indifferent success with this beautiful Dendrobe, it will be worth recording that the same plants have increased in vigour and are now making up their strong new growths for the next flowering season. Mr. Hudson thinks that the plant is not difficult to grow, if after flowering it be ripened in a sunny situation near the roof glass, and prepared to winter in a tolerably cool house, where it should be kept comparatively dry until the new growths begin in spring. Then it should be removed to a warm, sunny house, and be kept moist until the flowering commences again. It is necessary to observe the resting period in winter and the growing season in spring and summer. The large quantity of *Vanda cœrulea*, grown at Gunnersbury House is managed similarly, and the specimens are in fine condition.

spiked forms have furnished albinos, and, as with the coloured varieties, the white-lipped, short-spiked are much the better. A very fine form of *Cattleya Warscewiczii*, some good *Lælia tenebrosa*, *Cattleya Loddigesii*, and other showy Orchids are in bloom in the same house. J. O'B.

SOPHORA VICIIFOLIA.

THE pretty *Sophora viciifolia*, Hance (fig. 3), is a somewhat recent introduction from China, where it is rather widely spread, being found in the provinces of Yunnan, Szechuen, and Hupeh, and at elevations varying from 4,500 to 13,500 ft. In Yunnan, Mr. Hancock says, it is found in "hedges and wastes," and is "one of the commonest spring shrubs," while Dr. Henry speaks of it as "forming large heaths on barren soil." It is a spinescent shrub, compact and graceful in habit, and usually grows to about 4 feet in height. It has unequally pinnate leaves, 2 to 2½ inches long,



FIG. 3.—*SOPHORA VICIIFOLIA*: FLOWER BLUEISH-GRAY.
(From Mr. Gumbleton's Garden.)

spot entirely surrounded and overshadowed by trees, where no summer sun can penetrate. There are fifteen examples of *Dicksonia antarctica* ranging from 7 to 9 feet in height: these are associated with *Woodwardia radicans*, *Lomaria magellanica*, and other Ferns. In the ornamental water all the best of the Water-Lilies are grown, while on the island are splendid Bamboos and giant Gunneras. *Arundinaria Falconeri* was unfortunately flowering here, but *A. nobilis*, now said to be synonymous with *A. Falconeri*, showed no sign of flower. S. W. Fitzherbert.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM FORMOSUM GIGANTEUM.

At the Royal Horticultural Society, October 11, 1898, Mr. Jas. Hudson, gr. to Leopold de Rothschild, Esq., Gunnersbury House, Acton, was awarded a Silver-gilt Flora Medal for a fine group of *Dendrobium formosum giganteum*, bearing in the aggregate seven hundred large white flowers with orange centres. Most of these

ODONTOGLOSSUM BICTONENSE SPLENDENS.

A remarkably beautiful form of this variable *Odontoglossum*, and an improvement on the variety figured under this name in *L'illustration Horticole*, is flowering in the gardens of Leopold de Rothschild, Esq., at Gunnersbury House, Acton. It came with some others from Guatemala, and Mr. James Hudson, the gardener at Gunnersbury House, has grown it into a strong plant, which is now flowering for the first time. The stout, comparatively dwarf inflorescence has a good show of flowers, the sepals and petals of which are yellowish, very closely barred with chestnut-brown, the labellum being bright rose colour. It is doubtless the best form of the species which has yet flowered, and its flowers have a striking resemblance to those of a good *O. Uro Skinneri*, which grows in the same locality. There are several distinct types of the species, the beauty of each set varying probably according to the locality in Mexico or Guatemala in which they were collected. The set with the shortest flower-spikes, to which the variety *splendens* belongs, has the largest flowers, and the very tall-growing form has much smaller and more angular blooms. Both the tall and the short-

with eight to eleven pairs of small, elliptic or obovate leaflets, and lax, six to twelve-flowered racemes, terminating short branches. The flowers are rather more than ½-inch long, and have a blue or bluish calyx (the blue colour being due, according to Dr. Henry, to cultivation), and a milk-white or bluish-white corolla. A good specimen is trained on the wall of the herbaceous ground at Kew, where it is still flowering. The accompanying figure was prepared from material communicated by Mr. Gumbleton, who obtained a plant under the name of *S. Moorcroftiana*, a species apparently not in cultivation. It is closely allied to *S. viciifolia*, but is more robust, more spinescent, densely pubescent, has yellow flowers, and a longer, more slender calyx. *S. viciifolia* is figured in the *Botanical Magazine*, t. 7883, and in Franchet's *Plantæ Davidianæ*, i., t. 14, in the latter work as *S. Moorcroftiana* var. *Davidi*. S. A. S.

PLANT PORTRAITS.

DENDROBIUM LEECHIANUM. A hybrid between *D. nobile* and *D. aureum*, described in 1882, *Revue d'Horticulture*, June 16.

PAEONIA LUTEA, *Moniteur d'Horticulture*, May 10.

KEW NOTES.

ACTINIDIA KOLOMIKTA, RUPRECHT.—A large plant of this hardy, free-flowering deciduous climber, sometimes known as *Kolomikta mand-schurica*, is in full flower at Kew, on a wall facing north-east. It is a native of China (Amur) and Japan, and has been in cultivation for many years. It is figured in the *Revue Horticole*, 1872, p. 395, f. 43. The inflorescences are born in short cymose clusters from the ripened growths of the previous season, and are so freely produced as almost to cover the entire plant with its creamy-white flowers that are about $\frac{1}{2}$ an inch in diameter. The stamens are very numerous, and by reason of their dark-purple colour very conspicuous. The leaves are 2 to 4 inches long. The species belongs to a class of plants rarely met with in cultivation, although most of them are extremely handsome, and suitable for covering walls or pillars, the lovely autumn tints of their foliage, which changes to bright yellow and red shortly before the fall of the leaf, being an additional feature. They thrive in almost any soil, but in order to ensure a good crop of flowers each season it is essential that the wood be well ripened. The growths should be frequently pinched or spurred back as growth is very free in the summer months.

BERLANDIERA TOMENTOSA, Nuttall.

This pretty greenhouse plant is now in flower in a pan in the Temperate-house, Kew. It belongs to the Natural Order Compositæ, and is one of a genus of four species, all of which are natives of North America, and of which this species is the only one introduced to this country. The flower-heads are from $1\frac{1}{2}$ to 2 inches in diameter, disposed in loose terminal corymbs carrying from three to seven flower-heads. The ray florets are bright yellow, and about $\frac{3}{4}$ of an inch in length, those of the disc being rather large and of a bright reddish-brown colour. The leaves are alternate, the lower ones being shortly petiolate, ovate, acute or obtuse, with crenate margins, varying from 3 to 6 inches in length, and from 1 to 3 inches in breadth. The upper surfaces of the leaves are dark green in colour, the under surface being covered with a whitish tomentum. The upper leaves are sessile, acutely toothed, and much smaller in size. The stems are terete, more or less erect, and covered with a dense white tomentum. Seeds of this plant were received at Kew in 1898, and several of the seedlings flowered the following year, when the plant was figured in the *Botanical Magazine*, t. 7680. The plants have not yet produced any seed at Kew, the stock being maintained from cuttings, which root freely in early spring. Chas. P. Roßfill, June 20.

AMOMUM HEMISPHERICUM.

This gigantic plant of the Order Scitamineæ, first flowered in cultivation at Kew in 1897, two years after its introduction to the Royal Gardens by Mr. H. M. Ridley from the Straits Settlements. When it first flowered it was growing in a large pan; since that time it has been planted-out in a bed in the Aroid-house (No. 1), where it has become thoroughly established, and is growing as vigorously and making growths as large as it is said to do in its native home (Java).

The following measurements are from one of the leafy stems of the plant now in flower:—Stem 15 feet high, 2 inches diameter at the base; leaves 2 feet long and 7 inches broad. The leaves are arranged in two rows, and are deep green on the surface, red-brown on the reverse. The plant is carrying six inflorescences, developed on peduncles varying in height from 2 to $3\frac{1}{2}$ feet; the flowers are $1\frac{1}{2}$ inch long, very numerous, and closely packed in a globose head having a diameter of 3 to 4 inches. They are enclosed by large red, ovate, mucronate bracts; calyx and corolla-lobes lanceolate, of a reddish

colour. The lip is the most prominent part of the flower, being of deep red colour with a bright yellow margin, protruding beyond the corolla. It is a bold and striking plant, though somewhat less showy in the inflorescence than the allied species, *A. magnificum*.

Plants of this genus should be grown in a stove temperature, giving them a very light open soil to grow in. *A. hemisphericum* is figured in *Botanical Magazine*, t. 7592. W. H.

CLUSTER-CUPS ON ANEMONE CORONARIA, L.

The parasitic fungi popularly known as "Cluster-cups," on account of the spores being contained in little cup-like structures, produced in clusters on the living leaves of various plants, are very abundant this year. The species called *Æcidium punctatum*, Pers. (fig. 4), is exceptionally abundant, covering the under surface of the leaves of *Anemone coronaria*, L., with its tiny cups with toothed edges. Diseased plants are readily recognised, even at a distance, by the



FIG. 4.—ÆCIDIIUM PUNCTATUM.

pale curled leaves supported on long leaf-stalks, which rise erect and much above the foliage of healthy plants. When a plant is once attacked by this disease it remains infected for life, as the mycelium passes into the rhizome or "tubers," where it is perennial. After being once infected a plant never blooms, and all diseased plants should be removed and destroyed, because during those seasons when spores are produced the danger of infecting adjoining healthy plants is great. Geo. Massee.

EXPERIMENTAL CULTIVATION.

(Continued from p. 354.)

2. SCHEME FOR WORK.—In determining the scheme of experimental work to be undertaken, an attempt should be made to distinguish between experiments and demonstrations, though both are educational and useful if well designed and properly conducted. In some instances it is difficult to separate these objects, but a good deal has been rather loosely termed experimental, when it is essentially of demonstrational value. The Association, which has been previously referred to, gives the most satisfactory definition I have seen, as follows: "Generally speaking, the term 'experiment' would be used where, for example, the unknown action of some new substance or of some substance put to a new use,

was under trial. A 'demonstration,' on the other hand, is generally regarded as the repetition of some well-known experiment, or some process whose results under normal conditions may be confidently predicted." In other words an experiment is devised for the purpose of obtaining fresh knowledge, but a demonstration should serve to make clear to others the knowledge already gained. A considerable proportion of the educational work performed under the various County Councils must of necessity be directed to demonstration, but this leads naturally to experiment, and in some cases with admirable results.

As a general rule, however, colleges, institutions, societies and similar bodies with a scientific organisation, are more likely to attempt true experimental work.

All the best authorities agree in strongly recommending those who are starting experimental work to select some one definite object, and to confine attention at first entirely to that. Experience will soon prove how important this is, for fresh questions and difficulties are constantly arising in connection with almost every subject that is investigated, often necessitating several other experiments before the first one can be even approximately terminated. Consequently, if numerous objects are to be studied at one time, the probability is that the investigator will be overwhelmed with details that he cannot deal with, and much uncompleted work will have to be discarded, meaning so much waste of labour, time, and money. Professor Wrightson, in the course of some useful hints, gives the following valuable injunction: "We must not ask Nature too many questions at once, but put a simple straight-forward question."

EXPERIMENTS IN MANURING.

By far the most numerous experiments in cultivation have been concerned with the application of manures of varied character and in different amounts to both field and garden crops. The work at Rothamsted, which has done so much to prove the advantages derivable from artificial manures when employed with knowledge and judgment, has been practically followed and extended by many observers. It must always constitute a largely important part of all researches, because it affects the economy of cultivation and crop production to a material degree. The system of assisting crops and maintaining the fertility of the soil that will give the best results in produce at the least cost, demands the attention of all, for it is one of the chief keys to success. Therefore, although it might appear at times that the manurial trials have been unduly extended, substantial results have attended the majority of experimenters, and much will always remain to be done in this direction.

Comparatively little has been undertaken of a systematic character as regards the manuring of garden crops, the chief part of the recorded efforts having concerned farm crops, or such roots as Potatoes, which are of importance both to the farmer and the market-gardener. The good work, which has been already performed by a small band of observers, might well be extended or repeated in other districts; and there are few sections of out-door experimental research which offer so wide a field of interest as the study of manures and their influence. Fruits, vegetables, and plants grown for their flowers would all repay further attention, as the particular results secured in one district, whether favourable or the reverse, require additional and repeated confirmation to render them of general service.

METHODS OF CULTIVATION.

The comparison of different methods of cultivation, as well as experiments on the rotation of crop, constitute another important and interesting department. Many valuable lessons can be

afforded under this head by means of demonstration plots. These may be employed to show the benefits arising from deep *versus* shallow cultivation, cleanliness and attention *versus* weeds and neglect, and many other practices that are well established, but which none the less require to be frequently repeated and impressed upon the minds of learners.

VARIETY TESTS.

The testing of varieties in a satisfactory manner offers many difficulties, but it is of too much importance to be excluded from consideration, the chief point being that all trials of the kind should be conducted in as uniform a manner as possible. Perhaps, as regards the general methods of dealing with the comparison of new and standard varieties of garden plants, there is room for much improvement, but most of the trials undertaken by the Royal Horticultural Society at Chiswick have been well conducted and carefully recorded, though the system requires some modification to bring it into accordance with other experimental work.

POT-CULTURE.

Pot-culture trials with any crops that are grown extensively can only be regarded as introductory to larger experiments, but though there has been some prejudice against such work as trivial, it has chiefly arisen either from a misunderstanding of the objects, or because the experimenters have themselves sought to draw general conclusions from incomplete or partial evidence. When conducted on the best systems, pot-culture trials are valuable and instructive in a high degree, leading to useful work with probably considerable economy of time and expense. An admirable example of this has been afforded by the pot-culture station of the Royal Agricultural Society, established under the Hills' Bequest, the work at which I have had the privilege of observing and studying since it was commenced. One great advantage is that in a small space, and with comparatively moderate expense, numerous preliminary matters can be dealt with, or difficulties and divergences which crop up in the course of other experiments can be elucidated or disposed of without departing from the original plan.

INSECTICIDES, FUNGICIDES, ETC.

One branch of experimental work which up to the present time has scarcely received the attention it deserves, is that concerned with the use of insecticides, fungicides, and weed destroyers, together with the appliances best suited for the purpose of distributing the various substances economically and effectually. A few attempts have been made at systematic comparative trials, but these have only been sufficient to prove how much remains to be done, or to demonstrate the benefit which would result from pursuing the work still further.

RECORDING RESULTS.

However well experimental work may be designed and conducted, there is one essential which demands constant consideration, and that is the method to be attempted of taking and keeping the records. Some years ago I was invited to inspect a series of most important experiments in cultivation, which had been well organised and managed for some years by an amateur horticulturist. The most exacting could find little room for criticism in the general plan, but for the want of a clearly defined system of recording the results, a great part of the earlier work was lost, or the records were so imperfect that no satisfactory comparisons could be made with the later observations. The subject is so serious that any great defect at starting can seldom be subsequently remedied without recommencing the experiments, which means a corresponding waste of time and money.

THE METRIC SYSTEM.

As the weighing and measuring of produce must always be a most important part of recording results in experimental cultivation, the first point to determine is the method to be adopted, i.e., whether the records are to be taken in the complicated, unscientific British system, or in the more convenient and simple metrical weights and measures. For over fifteen years I have had the latter in almost daily use in conjunction with the ordinary cumbrous methods, and I unhesitatingly decide in favour of the metrical system for the records of all experimental work, both on the score of convenience and for the still more important reason that the risk of error is reduced. Scientific investigators have long been employing this method in their laboratories, and there is no adequate reason why it should not also be adopted in garden and field work, as until the public have become sufficiently accustomed to the system it is not a very great difficulty to give general results in the British weights and measures also. *R. Lewis Castle.*

(To be continued.)

MEXICO.

J. ALBERTO McDOWELL, horticultural commissioner to the St. Louis exposition, returned recently from a trip through Vera Cruz, where he spent a great deal of time in search for material for the exhibit at St. Louis.

There were about forty men throughout the Mexican republic, under the direction of the horticultural commissioner, making collections of the cream of Mexico's plants. Heretofore the exhibits for the most part have been Cacti and Orchids, but this year it will be as complete as possible, consisting of all varieties of plants of commercial or other value.

It was proposed to make an extra fine exhibition of fibre plants, Sarsaparilla, Vanilla, and other medical plants; also an exhibit of tropical fruits in the natural state was arranged. This includes Pine-apples, Mangos, the different varieties of Bananas, Limes, Oranges, Mamey, Cherimoya and Aguacate. The rubber trees were also to be represented among the tropical export producers. With the fibre-producing plants were to be exhibited sisal Hemp, better known as Henequen, and the different varieties of Lechuquilla or rope fibre plants which have an immense market throughout the world. The manufactured products of all of these different plants will be displayed in the manufactures department.

The Cacti are to be planted in mosaic, or carpet-bedding form. As a background for some of the fine specimens, a car-load of volcanic rock was to be shipped to St. Louis, and the plants will appear in that just as they are seen throughout Mexico. In the horticultural hall there will be a large space for the flowering plants, and a pomological department for the exhibit of fruits. Weekly shipments of fruits will be sent constantly to renew the exhibit of this department.

As to the arrangements of the gardens little can be said, but it was expected to have the Mexican grounds enclosed with a low fence of native Bamboo, a beautiful variety of which has recently been found in Vera Cruz, and then cover the fence with native climbers. The native *Cobaea scandens*, one of the most beautiful flowering climbers, will be in evidence, as well as the *Ipomoea purga* or Jalapa drug, the *Mina lobata* and the *Bougainvilleas*. *Zacaton* will be exhibited among the plants. It produces long fibrous roots utilised for brushes. Its market is mainly in Germany, where there is great demand for the brushes made from it. The fibre of this plant was exhibited at the Pan-American exposition in the forestry department, and was especially attractive. McDowell has in his gardens at

Cuernavaca a lot of Orchids, Coffee plants and Palms being acclimated especially for transportation to the gardens at St. Louis. A great exhibit is planned for Coffee and Tobacco in their natural conditions. Mr. McDowell has spent more than a year in making his collections, going from the west coast of Jalisco to the Gulf coast. It is expected that all collections will come simultaneously to Mexico City in April. Then the hardier plants from the tablelands will be shipped during the early part of April, and the others kept here for a few days to be forwarded during the latter part of April. In all there will be about five carloads. [Publication deferred. Ed.]

GARDENING AT ST. LOUIS.

PROGRESS in the advancement of horticulture and floriculture and the development of that part of the United States designated as the Louisiana Purchase, form the theme for an allegorical tale that is beautifully told by flowers of the Universal Exposition at St. Louis.

The unparalleled growth of the country and the advancement of the science of horticulture have kept pace the one with the other, and the two tales are told in giant parallel columns that mark the main entrance to the gigantic and beautiful Palace of Agriculture, the largest of the Exposition buildings. The strips of ground, 210 feet long and 25 feet wide, immediately west of the four-acre Rose garden, have been provided for this unique and beautiful exhibit. The sections are identical in form and size. The section on the north tells the story of the purchase from France, in 1803, of the then possessions of Louisiana.

Then after the land had attained an importance second to no other section in the world, the name of McKinley, under whose administration the great Louisiana Purchase Exposition was projected and successfully embarked, appears. The story is carried up to date by showing the Union shield and the name of President Roosevelt. In circles within the floral scrolls surrounding names of Napoleon, who sold the territory, and Jefferson, under whose administration it was bought, appears the monogram "L. P." (Louisiana Purchase) in flowers. In similar scrolls surrounding the names of McKinley and Roosevelt, the monogram is "L. P. E.," showing the importance of the Louisiana Purchase Exposition, and the great work it has done and is doing for the States embraced in the purchase, and for the world.

On the south, in similar manner, is told the story of how horticulture and floriculture have kept pace with the development of the country in other respects. First in this section appears the name, in giant floral letters, "Henderson," emblematic of the great work accomplished by Peter Henderson, the seedsman. Then follows the fleur-de-lis, planted as an ornament and made to harmonise with the twin historical pictures. Then comes the word "Meehan," commemorating the work of Thomas Meehan, whose life was devoted to the development of the shrubbery and tree industry, and whose printed works on landscape gardens and planting have long been reckoned as the highest authority. Midway is the picture, and extending the full width of the 25-foot strip is shown the flag of the Louisiana Purchase Exposition, in its colours of red, white, blue, and yellow.

Next in the mammoth picture appears a section with the word "Shaw" in immense letters, and surrounded by a graceful scroll of living flowers. This section illustrates the work done in the interest of general horticulture by Henry Shaw, the philanthropist who founded the Missouri Botanical Garden, and who gave to St. Louis the famous Shaw's Garden and beautiful and extensive Tower Grove Park.

Another mammoth fleur-de-lis, bearing the

monogram "L. P. E.," with 1904 beneath, appears, and following this is shown the word "Morton" as a final feature for the wonderful allegory. This is in recognition of the services of J. Sterling Morton, a former Secretary of Agriculture, and who, when he was acting in that capacity, was responsible for the establishment of Arbor-Day. As a result of this act millions of trees have been planted in the cities of the United States, and the day is observed everywhere.

The two pictures have for a background a great stretch of greensward. Growing in this turf are the pictures that are a triumph in embroidery gardening. Foliage plants, bulbs and summer-blooming plants go to make up the details. Flowers that make up the exposition colours of red, white, blue, and yellow are employed, and all the colours that are necessary to the historical correctness of the picture have been chosen. *American Gardening.*

[It will be noted that Englishmen born form a large proportion of those whom Americans have delighted to honour. Ed.]

NEW INVENTIONS.

THE AÉRATOR.

THE Standard Manufacturing Company, of Derby, has sent us for trial a hand-cultivator or revolving rake, which is calculated to be very useful. Under suitable conditions it does the work of a hoe and a rake with efficiency and ease. For running between rows of Strawberries, Lettuces, and so on it is very serviceable, forming a fine tilth. For the preparation of seed-beds it would be very useful. Where the seeds are already sown, or in herbaceous borders, caution would be required in its use, but in all cases where surface-stirring is desirable the tool would be of signal benefit.

WASHABLE DISTEMPER.

Messrs. Sisson Brothers & Co., Hull, send a sample of their paint, for which they claim, and we believe with justice, special advantages.

NURSERY NOTES.

ROSES AT THE OSBORN NURSERIES, HAMPTON.

The proprietor of these nurseries is Mr. Will Tayler. One of the features in this nursery just now is the avenue of pillar Roses, which were planted some three years ago. This Rose avenue is of value as showing not only the comparative vigour, general freedom, profusion, and earliness of flowering in individual varieties, but also their character when growing upon a warm and well-drained soil, resting on a gravelly subsoil, with further beds of sand and gravel beneath this. Thus it happens in the wet or winter season that the land, lying under water perhaps for a short period, is quickly and rapidly drained and workable when the downpour has ceased. In the past winter it was generally felt in the district that the land was getting the only thorough wetting it has had for several years past, yet it is evident by the yellowing and falling of the buds that for some kinds this particular soil is still too dry. A helpful lesson may be deduced from this avenue of pillar Roses, all planted three years ago under similar conditions. Chief among the successful kinds appear Carmine Pillar, growing 10 feet high, with a great wealth of blossoms, and a wondrous array of colour. This variety is early on this soil, and, showing its suitability to light soils, some 5-foot lengths of new growths were apparent. In the bush form in the open quarter the same variety was exceedingly

brilliant and good. Another striking kind is Alice Gray, white flushed with pink. This was 10 feet high at least, with its clusters of buds trailing or drooping, forming, perhaps, the most graceful climber in the collection. The characteristic way this variety drapes the soil is quite notable. Blairii No. 2 is one of the hardiest of the hybrid China class; while Madame Abel Carrière, with large handsome fragrant flowers, is strikingly free and of fine effect. This fine pillar Rose is very handsome in foliage alone, and while teeming now with bud and blossom, has its full complement of flowers in autumn also. Macrantha, the largest single white, is 8 feet high, but is not yet in bloom. Very early and effective is Reine Olga de Wurtemberg, with foliage of quite a leathery texture, and the light crimson flowers are in rich abundance. Lady Penzance Briar, which forms quite a pyramid of growth loaded with flowers, is very beautiful. Longworth Rambler is very full of promise. Gustave Regis has long tapering buds. Climbing La France is fine; Dundee Rambler free and hardy; Bardon Job, only 6 feet high at present, is quite a study with its crimson flowers; and Baron de Wassenaer (Moss) has the largest flowers of its class. It is not yet in bloom, but there is a great wealth of buds in sight, and the habit is excellent. Many other well-known Roses are to be seen, and among the more recent novelties, England's Glory, a pink Gloire de Dijon, is highly regarded. Robin Lyth is one of Mr. Tayler's seedlings; as a garden Rose it is full of promise, of exceptional vigour. *E. H. J.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Barford, Dorking.

Cypripediums.—Most of these plants which require the greatest degree of warmth, as C. Stonel, C. Rothschildianum, C. Sanderianum, C. Lawrenceanum, C. "Transvaal," C. Calypso, C. Curtisii, C. barbatum, C. grande, C. oenanthum, C. supercilare, C. ciliolare, and many others, have finished blooming; and the plants should now be thoroughly overhauled. Clean them from all dirt and insect pests, and if any are pot-bound and require more rooting-space let this be afforded. If it is found desirable to increase the stock by dividing the plants, the present is a good time for the operation. Such fine species as C. superbiens (Veitchii), C. callosum and its variety Sandera, grow best in the Cattleya-house. Both are shade-loving plants, and should not be exposed to sunshine at any time, otherwise the handsome foliage will soon turn to a yellow, unhealthy tinge, and probably become infested with thrips and red-spider. All well-rooted plants will require pots of about two sizes larger than those containing them now, and as they usually grow and root freely they should be afforded a freely porous compost of peat and sphagnum-moss in equal proportions, with a moderate quantity of broken crocks and coarse silver sand mixed with it. Those plants which have sufficient room may be resurfaced with the same compost. For a few weeks after repotting and until the roots are active afford but little water to the compost, but spray the foliage over several times each day whenever the weather is warm and bright. When they have become re-established abundance of water at the roots will be necessary. Such varieties as C. Boxalli, C. villosum, C. Spicerianum, C. Schlimii, C. aureum, C. Niobe, C. Adrastus, C. Euryades, C. Juno, C. purpuratum, C. fascinator, and others, which do best in a cool shady part of the intermediate-house, may also be repotted. The above compost may be used, but these cooler growing varieties grow stronger and produce finer blooms if a little fibrous loam be added to it.

Platyclinis filiformis is now in full growth, and showing numerous flower-spikes. The plants will require plenty of root-moisture, and the foliage should be frequently syringed to keep it free from insect-pests. A shady position in the

Cattleya or intermediate-house suits its requirements admirably. P. glumacea, P. Cobbiana, and P. uncata, now that growth is completed, should be placed in the intermediate-house, and less water afforded until growth recommences. An occasional sponging and syringing of the leaves will keep them fresh and clean.

Odontoglossum citrosimum.—At the present time plants of this distinct Mexican species are starting well into growth, and should be repotted or top-dressed as becomes necessary. As this species does not make many roots, receptacles of the smallest size should be used. Shallow Orchid pans that may be suspended to the roof are preferable to baskets. Place a few pieces of Fern rhizome over the hole at the bottom, and for the compost use equal parts of peat, leaf-soil, and sphagnum-moss, adding a few small crocks and silver-sand. Surface the compost with about $\frac{1}{2}$ inch of clean-picked sphagnum-moss. Cut off all useless back bulbs, leaving about three behind the new growth. Suspend the plants to the roof of the Mexican-house, and for a few weeks after repotting keep the surface moss just moist. After that time a little more water may be afforded, but never allow the soil to become wet to saturation point. O. citrosimum requires a warm atmosphere by day, but cooler and moister conditions at night.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

Broad Beans usually grow strongly enough to be self-supporting, unless they are in a very shaded situation; but this season, although sown in the usual way, the crop in this garden is very weak in growth, and the plants are almost inclined to lie down. Pinch off the top of each plant several inches long, to check the upward growth, and cause them to strengthen. If the plants are infected with black aphid, syringe them with Quassia-water, or dust them with tobacco-powder.

Onions.—If the final thinning has not been done already, let the work be attended to at once. Leave the plants at about 4 or 5 inches apart, according to their strength, the characteristics of the variety, and to what is required in regard to the size of the bulbs. If very large bulbs are needed, the plants must be encouraged with stimulants, such as liquid-manure and guano dissolved in water. When applying such stimulants, always err on the safe side by giving weak applications and often, rather than strong doses, which often do more harm than good.

Celery.—The sooner all plants are put into the trenches the better. We do not believe in keeping them in the beds until they get too large, as the larger the plants the greater the check to their growth by transplanting. A day or two previous to moving them to the trenches, run the edging knife either way between the plants in the bed, cutting deep, they will then come up with "balls" (earth) attached, and suffer a less degree of check. We do not water the plants in the beds previous to lifting, believing that they recover more quickly if well watered when placed in the trenches. Choose a dull day for the work of transplanting.

Califlowers.—Continue to plant for succession as the demand requires. Where it is possible to do so take the plants up with a quantity of earth attached, and plant them with a trowel. On our soil it is difficult to get many root fibres along with a plant, and we therefore resort to the old plan of dipping the few roots in a paste made from equal parts of cowdung, clay, and soot. [An excellent practice under all circumstances. Ed.] In this they soon commence forming fibres, but the removal causes a great check to the plants.

Cleanliness.—In advocating the keeping of a garden free from weeds, I admit that I find it almost impossible to do so this season, for the weeds come here, there, and everywhere; and it is a continual fight to keep them from overgrowing the crops. We must follow up the work of extermination, and under no conditions allow any to seed. With unremitting attention we shall get the upper hand in time, may expect to have less to contend with in the future, and leave no disastrous legacy to those who may succeed us.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Peach and Nectarine Trees.—These are now making clean, healthy growth. All the leading shoots and those required for fruit-bearing, filling up gaps, &c., should be preserved and made secure to the walls or trellises. Do not allow over-crowding of the shoots to occur; but before the young growths have become crowded a gradual reduction of the new growth should be practised. See that the fruits which have set and are now swelling up rapidly are not left too thickly on the trees; an even crop of well-developed fruits is preferable to a large number of inferior fruits. When the weather is bright and warm, syringe the trees each afternoon about 4 p.m. with clear water, taking care to well wash the under-side of the leaves in order to dislodge red-spider, &c. Trees that have been treated with quassia extract or some other insecticide for aphids should now be kept clean by the free use of water applied by the garden engine. Do not syringe the leaves sufficiently hard to damage them. Give attention to the very early varieties first, such as the Waterloo, Amsden, Alexander, &c., following on with Hale's Early, Early York, and then the mid-season varieties. If the trees have not yet been mulched lose no time in getting this done; it will help them to make strong, healthy fruiting wood, and to increase the size of the fruit.

Plums.—Several of the wall trees here are bearing good crops of fruit. Green-fly has been very troublesome, but repeated washings with soap-suds have cleansed the trees of this pest. All the leading shoots should be secured to the wall, and also a number of the young growing shoots should be trained in to take the place of the older branches. These growths when they are about two or three years old will produce the finest fruit. Cut back the rest of the growths to within four or five buds of the main branches. Mulching and watering will greatly benefit both the growth and fruit. Coe's Golden Drop, probably the best late dessert Plum grown, should be given special attention in regard to feeding and mulching. Syringe the trees at intervals with clear water, taking advantage of fine afternoons.

Red and White Currants.—These crop heavily when grown on walls facing east and west; and if properly netted and protected from birds, the fruits will hang and keep in excellent condition for many weeks. I have kept Red Currants sound until the beginning of September. Remove some of the young shoots, but do not use the knife too severely. Cleanse the berries and leaves before the fruit gets too forward, and mulch the roots with rotten manure. Should the soil be dry and of a somewhat light, gravelly nature, give a soaking of water occasionally.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Schizanthus retusus and *S. retusus* *Grahami* are extremely useful for furnishing vases. The flowers of the variety *retusus* are pure white, with a deep yellow blotch on the lip—a beautiful combination of colour. *S. retusus* *Grahami* has the yellow lip, but the colour of the remainder of the flower is warm rose-pink. If seeds be sown now, the plants will flower at the end of the autumn. Three or four seedlings should be pricked into a 5-inch pot. During the summer the plants may be grown in a cold pit, but in the autumn they should be transferred to a sunny position at the warm end of the greenhouse.

Rhododendron (*Asalea*) indica.—Plants which flowered early, and having completed their growth have set the flower-buds, may be placed out-of-doors to "ripen" (harden) the wood. Stand them upon a layer of ashes, or preferably plunge the pots to half their depth in this material. Constant attention must be given to the work of supplying the roots with water, on account of the drying effects of the sun and wind. A good syringing morning and evening on fine days is of great assistance in maintaining the foliage in a healthy condition, and in preventing thrips. Later plants which are making their growth may

be assisted with occasional applications of weak liquid-manure, particularly those plants which have not been repotted.

Ericas.—The early-flowering varieties will now be growing freely, and require an abundance of fresh air during the day. On warm evenings the ventilators should be left sufficiently open to secure a circulation of air during the night. Do not permit other plants to crowd the *Ericas*; it is essential that the air should circulate freely around them. Great care is necessary in supplying water to these plants and to *Epacris*, but when the drainage is in good order and the plants are growing freely, liberal supplies are required. Soft-water is very necessary, and where the ordinary supply is "hard," rain-water should be used.

Epacris.—Where the plants were cut back and repotted, as advised in a previous Calendar, these will have made considerable growth. Ventilation may now be afforded freely, and if the house-room is required for other subjects, the plants may shortly be stood on ashes in the open-air.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Young Vines that were planted early in the season will have made considerable progress. Before the Vines have quite reached the top of the house, the leading shoots may be stopped, which will cause laterals to grow more freely; and these should be regularly stopped when two or three leaves have been formed, the object being to obtain canes of medium strength, well ripened, and with roots to correspond. Keep the soil of the border moist by frequent waterings, and when the roots are more numerous, afford a light mulch to prevent excessive evaporation. Keep a sharp look-out for red-spider, and if any is observed thoroughly syringe the foliage, but otherwise the syringe may be less frequently used. Let the night temperature be 70°, and when the canes begin to ripen afford more air and less moisture. Young Vines that have been raised from eyes should be repotted as soon as the pots have become moderately filled with roots. The pots may be 7 or 8 inches in diameter; they should be clean and provided with good drainage. For a rooting medium use light loam that is not very rich, with a sprinkling of Thomson's Vine-manure and sand. Make the soil moderately firm, and keep a night temperature of 70°, allowing a rise of 10° or 15° from sun-heat during day. Give close attention to watering, and seek to obtain well-ripened rods about 5 feet in length, stopping the lateral growths after the first leaf.

Figs.—Encourage the second crop by increasing the temperature by means of sun-heat, and afford an abundance of moisture in the atmosphere and at the roots. Close the house in the afternoon at a temperature of 85°. When the trees are bearing heavy crops of fruit, and the borders are well filled with roots, liberal supplies of liquid-manure are essential. It has been necessary to reduce considerably the number of fruits in a second house here, the second crop of which, as in previous years, we hope will last until the end of December. Give abundance of ventilation to Figs that are ripening. Thin out useless shoots, so that the sun's rays may thoroughly ripen the wood. After this date do not stop any shoots in the early-house. At this season a small scale insect is liable to make its appearance upon the wood and fruit of the Fig, which it is best to remove now by hand, and to bear the matter in mind when the trees are dormant that they may be thoroughly cleansed.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Subtropical Plants.—These plants require to be mulched, and watered frequently in dry weather. Provide stakes for any plants that require support.

Flower-seeds.—Seeds of Wallflower, *Myosotis*, and *Silene* may now be sown. Stretch a piece of net over the rows to keep the birds from dusting themselves in them. Seedlings of Brompton

Stocks and Sweet Williams may be transferred to a shady border. Slugs must be destroyed, or they will devour them all.

Carpet-bedding.—The beds should be sprayed over in the evening during dry weather, when the sun is off them. When heavy waterings have been afforded stir the soil with a small stick, or it will form a crust and greatly retard the plants from growing. Small offsets from *Echeverias* may be planted on a shady border to increase the stock.

Roses.—Hoe the surface of the ground frequently, and syringe the plants with quassia-water before the flowers open. Dishud any plants that require it. The variety *Mrs. W. J. Grant* should be included in every collection, for it has a soft, pleasing colour, and keeps good a considerable time when arranged in vases. Any Rose plants that are worthless and have lost their names should be marked when they are in flower, that others may be substituted for them in the autumn. If the weather be very dry, or the beds are raised, they may be mulched with cow-manure. Raised beds are not to be recommended.

Border Chrysanthemums, Lilliums and Gladioli will require to be staked neatly, the surface of the soil should be mulched, and water supplied when necessary.

Specimen Plants.—These may now be placed on the lawns, or if they consist of Palms and Ferns, and are sufficiently hardened, they may be plunged in the grass in the shade.

Rhododendrons and Azaleas.—Remove the old flower-trusses. Keep the grass cut down where it is too thick for the hoe. The soil should be covered with a thick mulch if possible. This will kill the weeds, and greatly benefit the plants. Any that are to be moved in the autumn should be marked according to their colours.

THE APIARY.

By EXPERT.

Wax-moth.—Keep down all wax-moth grubs. These pests are very numerous this year; also replace naphthalin in the back of hives, and allow no bees to get behind the dummy.

The Week's Work.—Honey should now be coming in very freely, and in good districts, where Sainfoin is abundant, the honey harvest should be good. The weather is not all the bee-keeper could wish for, the cold winds keeping many bees in their hives. As soon as sections are nearly filled up, lift up the crate and draw a carbolio cloth underneath it, and then put an empty crate underneath, placing the partly-filled one on the top. The bees will then travel through the empty crate to finish the section in the top. Another plan is to place a bee-escape under the filled section crate, and take them off next day. Or another method is to take them out singly from the crate and fill up again. All sections should be kept the same way up as removed from the hive, and stored away in a place of safety. All operations should be done in the afternoon if possible, working from the back of the hive, and always having the smoker at hand in case of need. It is better to have it there than be obliged to go for one at the time the hive is open. Hives that seem strong and no bees at work should be given immediate attention, if there is the slightest trace of foul brood. Call in an expert if you yourself do not know how to deal with it. Should the case be very slight spray each comb with Izal diluted as per instructions on the bottle, the cost of which is 1s. Spray the floor-board and body-box, and continue to keep the floor-board damp with it, also the quilt on the top bars. Should, however, the case be a bad one, it is best and safest to destroy the whole hive, including bees; but should the bees be very strong, shake the bees from the frames into a clean hive and placed where the old stock stood. Care should be exercised in this matter, in not touching any other hive until you have washed your hands in carbolio solution or Izal, or carbolio soap. All wax moths should be brought out and destroyed; ants should also be treated in the same manner by smothering them with kerosene. Replenish water near the hive. Each swarm should be dated and numbered for future reference.

APPOINTMENTS for JULY.

FRIDAY, July 22	Opening of the New Hall of the Royal Horticultural Society by His Majesty THE KING.
SATURDAY, JULY 2	Sutton Rose Soc. Show.
MONDAY, JULY 4	Maidstone Hort. Show.
TUESDAY, JULY 5	Scottish Hort. Assoc. Meet. Nat. Rose Soc. Show in the Temple Gardens, London. Croydon Hort. Soc. Show. Hanley Hort. Fête (2 days). Southampton Hort. Show (2 days).
WEDNESDAY, JULY 6	Lee and District Hort. Show. Roy. Bot. Soc. Exhibition, Regent's Park. Ipswich and E. of Eng. Hort. Soc. Show. Ealing Rose and Hort. Show.
THURSDAY, JULY 7	Rose and Hort. Shows at Norwich, Chipping Norton, and Walton-on-Thames.
FRIDAY, JULY 8	Brockham Hort. and Rose Show. Roy. Bot. Soc. Lecture.
SATURDAY, JULY 9	Windsor Rose and Hort. Soc. Exhibition. Warrminster Rose Show.
TUESDAY, JULY 12	Roy. Hort. Soc. Show at Holland House, Kensington (2 days). Wolverhampton Floral Fête (3 days). Hort. and Rose Shows at Gloucester and Wolverhampton.
WEDNESDAY, JULY 13	Nottingham Hort. Soc. Show (2 days). Ranelagh and Dist. Hort. Exhibition. Hort. and Rose Shows at Formby, Harrow, Reading, Stevenage, and Thornton Heath.
THURSDAY, JULY 14	Weybridge and District Hort. Soc. Show. Brentwood Hort. Exhibition. Highgate Hort. Soc. Annual Exhibition. Woodbridge Flower Show. Eltham Rose and Hort. Exhib. Potters Bar and Dist. Hort. Show. Rose and Hort. Shows at Bath, Helensburgh, Southsea, and Woodbridge.
FRIDAY, JULY 15	Rose and Hort. Shows at Gresford and Ulverston. Roy. Bot. Soc. Lecture.
SATURDAY, JULY 16	Manchester Hort. Soc. Rose Show.
TUESDAY, JULY 19	Roy. Scot. Arboricultural Soc. Exhibition of Forestry at Perth (4 days). Flower Shows at Saltaire and Tibshelf.
WEDNESDAY, JULY 20	Nat. Sweet Pea Soc. Show at the Crystal Palace (2 days). Agric. Soc. Show at Hauley (2 days). Hereford Rose Show.
THURSDAY, JULY 21	Leamington (St. John's) Hort. Show. Hort. and Rose Shows at Salterhebble and Halifax.
FRIDAY, JULY 22	Roy. Bot. Soc. lecture.
TUESDAY, JULY 26	Roy. Hort. Soc. Coms. meet; also Nat. Carnation and Picotee Soc. Show combined.
WEDNESDAY, JULY 27	Cardiff Flower Show (2 days). Newcastle-on-Tyne Flower Show (3 days).
THURSDAY, JULY 28	Chesterfield Hort. Soc. Show. Carnation Show in Birmingham Bot. Gdns. (2 days).
FRIDAY, JULY 29	Roy. Bot. Soc. lecture.

SALE FOR THE WEEK.

FRIDAY NEXT—

450 Imported *Odontoglossum Pescatorei*, also Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63°0'.

ACTUAL TEMPERATURES:—

LONDON.—June 29 (6 P.M.): Max. 71°; Min. 55°.

June 30.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden (10 A.M.): Bar., 30; Temp., 71°. Weather, bright sunshine.

PROVINCES.—June 29 (6 P.M.): Max. 66°. North of Ireland; Min. 58°. East Coast of England.

A Memorable Week.

THE week now closing will be historically interesting. It is expected that the last "Drill Hall" meeting has been held, and that in future the exhibitions of the Royal Horticultural Society will be held in the new buildings approaching completion in Vincent Square. During the chaotic period at South Kensington, and subsequently, the Society appeared on the verge of extinction, an outside Committee lent its aid to the Council, and made various suggestions. It did more. It recommended the acquisition, for the purposes of the Society, of the Drill Hall of the Scottish Volunteers in James Street, Westminster, and of the premises at 117, Victoria Street—the one for the exhibitions and meetings of the Committees, the other for the offices of the Society and for the housing of the Lindley Library. In spite of the notorious deficiencies, both establishments have well served their purpose. Now a new era is commencing. The Vincent Square building is nearly completed. It will afford vastly improved accommodation. The unremitting energy and organising faculty of the Secretary will, we have every confidence, ensure that the Society will in future have, what it has never had before, a home adequate to its requirements. Something is still lacking. We have had plenty of shouting, plenty of lip-applause, but those who were loudest in their protestations have hardly backed up their words substantially. It is to be feared that the new building may be hampered with debt, and that the Council will be harassed with difficulties which ought never to have arisen. There is still time, as the *Times* reminds us, and, before the KING and QUEEN formally open the new building on July 22 next, there is ample opportunity for those who derive the greatest benefit from the Society, and for others who have not yet contributed so much as the cost of a chimney-pot, to show that their clamour for a Hall was not purely selfish.

The week will also be memorable for the meeting of the Gardeners' Royal Benevolent Institution. When it was announced that the chair was to be taken by Mr. HARRY VEITCH, it was felt that the value of his services would be acknowledged by everybody, and that, apart from all personal considerations, every effort would be made to render his Chairmanship a success; and it was so. Mr. VEITCH must have been gratified by the homage paid him. It could hardly have been otherwise. We do him no more than justice when we say that his greatest satisfaction was experienced by the circumstance that the meeting over which he presided was not only a record one in point of numbers, but that no other has been the means of alleviating in an equal degree the sufferings and necessities of the class for whom he pleaded. The name of Mr. SHERWOOD must also be inscribed on the list of those "who love their fellow-men." His donation of £500 to the Gardeners' Benevolent, and of a like sum to the Gardeners' Orphan Fund, may surely be characterised as not the least important events of this memorable week.

The doings of the previous week, including the opening of the Educational and Forestry Exhibitions at Park Royal, Willesden, under the auspices of the Royal Agricultural Society, and the formal opening of

the Horticultural Department of the Reading University College, were also events of much importance, and are more fully alluded to in the following article.

To those who can look back even for only a few years to the state of instruction in

horticultural matters, and to the time when those who advocated the co-operation of practice with science were laughed at, or at least unheeded, the progress made of late must be eminently satisfactory. We have much, very much to do ere we can hope to rival our cousins in the United States, or our German neighbours, but we are beginning to recognise that, so far as agriculture and horticulture are concerned, we have much to learn from other countries. Deputations of farmers have visited little Denmark to see how it is that with inferior resources she is able not only to compete with, but to undersell us in our own markets. Similar visits have been paid to French and German forests, to Dutch farms, and Hungarian horse-breeding establishments. Such journeys would not have been made had we continued to be enshrouded in our own self-conceit. The very recognition of the fact that such visits were desirable is a sign of awakening. And what has been the net result? What is it that has given such an impulse to the practice of cultivation in countries from which at one time we thought we had nothing to learn, but which nevertheless flood our markets with produce, some considerable part of which might well be grown at home? All agree in the reply that it is to the spread of education, to the organisation of effort, and to the adoption of the principles of co-operation—in brief, to the spread of knowledge and the application of scientific methods to practical aims.

The question to what extent the State as such should render aid is a moot-point. One thing, however, is certain, that individual enterprise is not in all cases adequate to meet the requirements of the case. Look at the scores of educational and experimental stations in the United States, whose publications literally pour in upon us. They do for the farmer and the gardener what they could not do for themselves; first they get hold of the youths, train them, teach them to educate themselves, enable them to appreciate and turn to advantage the resources that lie open to them when well trained in practical work and well grounded in the principles which constitute the bank upon which they will have to draw in the future. When the pupils go out into the world the colleges do not necessarily lose sight of them, but keep in touch with them, if they so choose, by means of bulletins issued from the several stations. These publications keep them informed as to the progress of their science and their art, sound a note of warning where required, suggest measures of precaution when needed, and supply endless hints of the greatest value to the intelligent cultivator. Moreover, in any case of difficulty or perplexity there are the State officials to refer to for advice and suggestion. Nor are intensely practical matters connected with railway tariffs and markets forgotten. Combination and co-operation in the collection, supervision, and distribution of fruits, vegetables, and other market produce ensure regularity of despatch, uniformity of quality,

and consequently more satisfactory relations between growers and brokers than is possible when everything is left to individual enterprise. Our own Agricultural Department has lately shown signs of vigour in this direction, which are very encouraging to those who have the interests of cultivators at heart.

The Educational and Forestry exhibits at the recent Agricultural Show, though small in amount, were sufficient to show what excellent work is in course of accomplishment at Wye, at Chelmsford, and other colleges which have sprung into existence during the last few years. It is needless, of course, to speak of Rothamsted, for that stands apart without a rival in this or any other country, but the multiplication of agricultural colleges and experimental stations in the various counties for which we in past years pleaded so often, and as we feared in vain, is we rejoice to see in course of accomplishment. A visit to the Educational Department at Park Royal must have proved a most valuable object-lesson to many. Cultivators to whom books, lectures, diagrams, and figures appeal but lightly, must perforce have had their attention stimulated and their interest aroused by the objects there exhibited. When such concrete results are laid before them, the cultivators will feel more respect for the book-learning which rendered them possible.

Of course, to a very large extent what applies to agriculture applies also to horticulture, and the remarks pertinent to the one are applicable to the other. We are, therefore, especially pleased to have to record the official opening, on Friday, June 24, of the garden of the Horticultural Department of University College, Reading, by the Minister of Agriculture, the Earl of ONSLOW. The garden is familiar to very many of our readers as having been in the occupation of Messrs. SUTTON previous to their removal to their present more extensive trial-grounds.

Mr. Frederick Keeble, M.A. (Gonville and Caius College, Cambridge), is the Director of the Horticultural Department of the College, and Mr. Charles Foster, F.R.H.S., Instructor in Practical Horticulture. The Garden is under the direction of a garden committee, consisting of gentlemen in whom the greatest confidence may be felt.

Previously to 1902 the College possessed no garden for the teaching of practical horticulture. Instruction was given in the scientific principles of horticulture, but there was no effective provision for practical work. Interest in the department of horticulture had always been great, and for some months previous to their removal Messrs. SUTTON kindly permitted the department to make use of their glasshouses and land.

Mr. ALFRED PALMER then befriended the College by offering to lease to the Council on favourable terms the whole of the gardens and buildings thereon. These arrangements were concluded before the end of 1903. The tasks of plotting out the 7 acres of ground, of constructing nearly a mile of paths, and of establishing a Peach-house and vineries, were carried out by the students and staff, under the superintendence of Mr. FOSTER, the instructor in practical horticulture.

Broadly speaking, the department has three aims: (1) The first is the training of men and women in the science and practice of horticulture. The demand for such training increases year by year, and comes from many quarters. This cannot be better illustrated than by reference to the prospective careers of the students now in the department. Of the seventeen students, four

intend to become fruit-growers, two at home and two in the colonies; four to enter upon florist and nursery work; one to take a position in a seed-testing station; one to enter his father's nursery business; two to start market gardens, and the remainder either to work as lady gardeners or to manage their own private gardens. A system of scholarships makes provision for the training of professional gardeners. At present two such scholarships are held, and next year the Council is offering three scholarships, each of the value of £45, tenable at the gardens for one year. Mention should also be made of the invaluable service rendered by the gardens to the students of the College in their botanical and nature studies.

(2) The second aim is to carry out experiment and research whereby the sum of horticultural knowledge may be increased. Among researches now in progress attention may be called to the large plot devoted to a Potato trial undertaken in conjunction with the National Potato Society. Samples of the twelve chief Potato varieties are being cultivated under conditions rigorously similar. Their growths will be ascertained and the results will be carefully compared with those of similar trials carried on elsewhere.

(3) The department desires to be of practical service to the region round Reading. With this object an information bureau is being organised whence, for a small fee, expert advice in the management of gardens and orchards may be obtained, and whence also the services of trained gardeners may be secured.

The garden, as it is now, affords ample opportunities for most kinds of horticultural work, and no ground could be more conveniently situated in respect of the proposed new college buildings. Laboratory, class-room, and garden will be in immediate proximity to one another. The needs of market-gardener, florist, landscape gardener, will be effectively met; but, clearly, among the needs of the future will be ground for a fruit station. The acquisition hereafter of a suitable fruit station will complete the equipment of the Horticultural Department.

The garden contains 24 houses in all, utilised as follows:—1 and 2, Cucumbers and Melons; 3, Ferns; 4, Roses and Tomatos; 5 and 6, Tomatos; 7, Carnations; 8, Tomatos; 9 and 10, Melons and Cucumbers; 11 and 12, Cucumbers; 13, Peaches; 14, early vinery; 15, late vinery; 16, Cucumbers; 17, 18, and 19, Begonias; 20, 21, and 22, green-houses; 23, Cucumbers; and 24, Ferns.

The proceedings at the opening ceremony were commenced by the Chairman of the Council, OWEN RIDLEY, Esq., J.P., after which a statement was made by the Principal of the College, Mr. W. M. CHILDS, M.A., who explained the need that exists for the training in horticulture of those young men and women who intend to follow the profession as a means of livelihood. He pointed out the reasons for forming the horticultural department at the College and explained what the course of study there would be. He said that the students work for a diploma, the granting of which is authorised by the University of Oxford, the conditions of which are governed by a Committee which represents jointly the University of Oxford and the College at Reading, and includes representatives of the Royal Agricultural Society and the Royal Horticultural Society. In addition to this course, which lasts at least two years, and may last three, the students also take the examination of the Royal Horticultural Society, and sixteen having entered for the recent examination, Mrs. BENYON consented to present that day the certificates to the sixteen successful candi-

dates. There might, said Mr. CHILD, be some there who doubted the practical side of the horticultural training. He would invite such persons to visit the marketing shed and inspect the produce there, and remember that all of it had been cultivated in their own trial grounds by the students and staff. If any one doubted the scientific part of the curriculum, he would refer them to the shed, in which there were shown by diagram and actual example instances of those diseases which are so costly to the market-gardener—instances so set forth that they could be easily understood by those concerned.

The next speech was by Mr. ALFRED PALMER, Chairman of the Gardens Committee, who said that at present they had seventeen students, but they could accommodate thirty with very little more expense.

Lord ONSLOW, in declaring the Gardens open, delivered a very sympathetic speech, declaring that he knew of no establishment where such a horticultural training could be obtained as they were giving at Reading. He specially accentuated the desirability of facilitating the teaching of the principles of horticulture to those whose duty it will be to impart elementary education in the schools, and begged the College to arrange classes on Saturday afternoons as well as in holiday time for elementary school teachers. He should be extremely glad if the Board of Agriculture could assist such efforts as those that are being made at Reading, but with an income tax of one shilling in the pound in a time of "profound peace," he was afraid they must wait until the times were more propitious.

Mr. MARTIN JNO. SUTTON proposed a vote of thanks to Lord ONSLOW, which was seconded by Mr. FREDK. KEEBLE, M.A., who took the opportunity to speak appreciatively of the work done by Mr. CHAS. FOSTER, the Garden Superintendent, in the short space of time he has been there.

We afterwards walked through the gardens and inspected the crops, all of which were in excellent condition. The general state of these gardens, and the skilful cultivation shown in each of the crops, were praised by all. The indoor Tomato crop was exceptionally good, and the produce gathered together in the "marketing" shed in exhibition form was a sufficient testimonial to the skill of the cultivator.

MINLEY MANOR (see Supplementary Illustration).—Thirteen years ago we gave a description and illustration of this fine garden near Farnborough. It was then in course of construction under the superintendence of Messrs. VERTCH. It is remarkable for its resemblance to the gardens attached to old French chateaux; and this is appropriate enough, as the style of the mansion is also French in character. But besides this Messrs. VERTCH introduced large beds of flowering and other ornamental shrubs each, devoted to a single species, which are very effective; and here and there on the lawns are specimen flowering trees now of great beauty. The whole garden affords an admirable illustration of the way in which the rigidly formal garden near the house may, by imperceptible gradations, blend with the more distant wood and heathland. The plan of the winter-garden at p. 707 of our number for December 12, 1891, worked out in dwarf Conifers, green and golden, and Hollies of like colour, shows what effects may be produced in this way, and will remind the visitor of Chantilly and other French chateaux.

ROYAL HORTICULTURAL SOCIETY.—From the report of the examiners we learn that at the recent annual examination no fewer than 199 papers were sent in. More than 18 per cent. of the candidates were placed in the first class, 49 per cent. in the second, and 32 per cent. in the third class. Although the actual numbers of the candidates has declined, the quality of their work has appreciably improved, especially in matters pertaining to practical horticulture.

SIR JOSEPH HOOKEF.—All honour to the veteran botanist, who completes the 87th year of his age to-day, June 30!

"BIRTHDAY HONOURS."—Among those who were selected as the recipients of honours in connection with the King's birthday are Professor DEWAR and Dr. STEVENSON, who are to be knighted. Sir E. MAUNDE THOMPSON, the principal librarian of the British Museum, who is already a K.C.B., is gazetted as a Companion of the Imperial Service Order, and a like recognition is bestowed upon CHARLES FORD, Esq., late Superintendent of the Botanical Afforestation Department of the Colony of Hong-kong.

ROYAL GARDENERS' ORPHAN FUND.—We understand that the Treasurer of this institution, N. N. SHERWOOD, Esq., has written from Australia to give the Fund a special donation of £500. The generous and consistent support Mr. SHERWOOD has afforded the gardening charities is well known. This fresh instance of his liberality will be gratefully appreciated by the whole gardening community, especially in view of the fact that Mr. SHERWOOD has, as was announced at the dinner on the 28th ult., presented a similar amount to the Gardeners' Royal Benevolent Institution.

BRITISH GARDENERS' ASSOCIATION.—The Honorary Secretary asks us to state that owing to the pressure of correspondence, he hopes that intending members and others will pardon any delay there may be in answering their letters. Those interested in the Association, and willing to forward its interests, may render valuable assistance by applying for forms of application, &c., for distribution, or by sending the names of qualified gardeners likely to join. Donations towards the £250 required for initial expenses will be welcomed, it being felt that when the services of a paid Secretary and offices can be secured the Association will speedily be able to make its presence and influence felt.

LILACS.—M. HENRY, in the *Revue Horticole*, notes the production of inflorescences from suckers. We have seen a similar occurrence in *Ailanthus*. M. HENRY also notes the production of an inflorescence from the old wood of the Lilac. We have met with a like production from the old rods of a Vine.

ENGLISH ARBORICULTURAL SOCIETY.—On July 2, a visit will be paid by the members of this Society to the estate of the Marquess Camden, at Bayham Abbey, near Frant, Sussex. The annual meeting will be held at Aberdeen, from August 16 to 19, when Haddo House, Balmoral, and other estates will be visited. Mr. E. DAVIDSON, Haydon Bridge, Northumberland, is the Assistant Secretary, to whom communications should be addressed.

"THE BRITISH JOURNAL OF PHOTOGRAPHY."—We owe an apology to our contemporary for not previously offering our congratulations on his jubilee number; but we see that we are not alone in being unable, from press of matter, to insert contributions with the promptitude which is desirable. It is not too late to call attention to the admirable history that this number affords of the development of photography and of the progress of the *Journal*; whilst the biographical details relating to successive editors and contributors are of very great interest. We are glad to see a

notice to the effect that "advertisements are inserted absolutely without condition, expressed or implied, as to what appears in the text portion of the paper." Advertising agents, in their anxiety to "do business," are unconsciously doing their best to depreciate the value of legitimate advertisement, and to injure the reputation of those journals which do not strictly maintain the distinction between the advertising and the editorial departments.

MR. CHRISTOPHER DEAVIN, who has filled the position of gardener to Colonel the Hon. CHARLES HAY DRUMMOND, at Harewood Lodge, for the past twenty-five years, has retired, at the age of seventy-six, upon a pension.

INSTRUCTION IN HORTICULTURE.—The Education Committee of Essex, with a view of assisting teachers in the administrative county to gain a knowledge of gardening operations necessary for the successful working of school gardens and evening continuation school gardens, has decided to hold a holiday course in the principles and practice of horticulture at the Biological Laboratories and Garden at Chelmsford, in the month of August, 1904. The course will commence on August 8, and will meet daily for two weeks, provided a sufficient number of teachers make application to attend. The laboratories and garden at Chelmsford afford every opportunity for successful horticultural work, and the students will themselves perform all the necessary garden operations. Both men and women are invited to take the course. The Committee will defray travelling expenses once to and from Chelmsford, and will in suitable cases make a special allowance of 12s. 6d. per week towards the maintenance of candidates fulfilling the necessary conditions. Applications must be made on printed forms, to be obtained from the Secretary, County Offices, Chelmsford, and must be received by July 21 at latest.

VEGETATION IN LONDON.—According to Mr. MAWLEY's annual report of Phenological observations for 1903, the earliest date in which the first speck of green was visible on the Lime trees in the garden of the Bank of England was March 14, in 1893; the latest, April 20, in 1888. The trees were quite bare of leaves on October 17 in 1896, the earliest date; and on October 31, in 1895, as the latest date. The mean for sixteen years was March 29 for the vernal, October 24 for the complete fall of the leaf.



CLEMATIS.—The identity in essentials between the ordinary leaves and the parts of the flower is well shown in some Clematis flowers sent by F. R. MARSH, Esq., through Messrs. BARR. The outermost segments, instead of being petaloid, are present in the form of leaves—in some cases of large size and deeply lobed, quite as in an ordinary foliage leaf.

GARDENERS' OUTING.—On Saturday last about forty members of the Oxfordshire County Council horticultural classes visited Messrs. SUTTON's trial-grounds and the University College Gardens, Reading. The party was met at the entrance to the trial-grounds by Mr. LEONARD SUTTON, who gave them a hearty welcome. He afterwards conducted the visitors through the principal trials and greenhouses, explaining the chief points of interest. The party then proceeded to the University College Gardens, where they were met by Mr. F. KEEBLE, Director of the Horticultural Department, and Mr. C. FOSTER, the Superintendent of the Gardens. The impression gained in going through the greenhouses, which contained magnificent crops of Tomatoes, &c., was that of excellent order and cleanliness.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL OUTING will take place on Tuesday, July 19, when the members and friends

will proceed, at 10.25 A.M., by special train from Baker Street Station (Platform No. 2), for Waddesdon Manor Station, calling at Finchley Road at 10.30, Harrow at 10.45, and Rickmansworth at 10.55. A visit will be made to the gardens and grounds at Waddesdon Manor by permission of Miss A. A. DE ROTHSCHILD.

FUNNEL ON CABBAGE LEAF.—From the Curator of the Royal Gardens, Kew, we have received a good example of a very common formation in Cabbages and in Lettuces. The midrib breaks away from the lower surface of the blade above its middle and forms a long slender stalk which expands above into a funnel-shaped, leafy "pitcher." On cutting across the midrib, as also the stalk of the pitcher, it will be seen that the

vascular bundles are arranged in a circle  as they are in shoots, not as they are usually in leaf-stalks, . The woody portion of the bundles is turned towards the centre, the bast or phloem towards the circumference.

WHEAT-GROWING IN CANADA.—A paper on this subject, written by Mr. W. SAUNDERS, Director of the Dominion Experimental Farms, gives some figures interesting to those who are fond of statistics or who are interested in the food supply of Britain. He says that "the area of land suitable for the growing of agricultural crops in Canada is so vast that when presented in figures the mind needs a deal of training before their full significance can be grasped. The total imports of Wheat and flour into Great Britain in 1902 were equivalent in all to about 200,000,000 bushels of Wheat. Were one-fourth of the land said to be suitable for cultivation under crop, the total crop (under favourable conditions) would be over 812,000,000 bushels. This would be ample to supply the home demand for 30,000,000 of inhabitants and to meet the present requirements of Great Britain three times over. This estimate leaves the large Eastern Provinces out of consideration. Summary: Land fit for settlement in Western Canada, 171,000,000 acres; present production of Wheat and other grains, about 125,000,000 bushels; and possible Wheat production, 800,000,000 bushels.

MR. R. P. BROTHERSTON.—The Neill Prize, which is in the gift of the Royal Caledonian Horticultural Society, was on June 22 awarded by the Council of that Society to Mr. R. P. BROTHERSTON, gardener to the Earl of HADDINGTON, at Tynninghame, East Lothian, as was announced on p. 406 of our last issue. The prize is awarded every second year in terms of Dr. PATRICK NEILL's will to some "distinguished Scottish botanist or cultivator." For this purpose Dr. NEILL, who was the first Secretary of the Society, bequeathed £500; and the prize, which amounts to about £30 on each occasion, has been awarded to, among others, such men as the late Prof. BALFOUR, JOHN SADLER, and ISAAC ANDERSON HENRY, of Edinburgh; WM. THOMSON, Dalkeith; DAVID THOMSON, Drumlanrig; MALCOLM DUNN, and MALCOLM MCINTYRE. Mr. BROTHERSTON, a native of Roxburghshire and now in his fifty-seventh year, served his apprenticeship with Mr. WM. THOM at Newton Don, a splendid type of the old-fashioned painstaking gardener, and a keen grower of hardy fruits, vegetables, and flowers. Lady ELEANOR BALFOUR was then alive, and under her influence everything new in Carnations, Pinks, Dahlias, Hollyhocks, Phloxes, and Roses was grown. After a few months at Leuchie, Mr. BROTHERSTON went to Mr. JAMES DOUGLAS, V.M.H., then at Loxford Hall, going through all the departments from the lowest to inside-foreman. After two years with Sir JAMES BUMLEES at Argyle Lodge, Wimbledon, he removed to Tynninghame, thirty years ago, in

succession to Mr. THOS. LEES. Mr. BROTHERSTON has accumulated a very good collection of horticultural literature, and with due respect for things old he is very much up-to-date. An afternoon at Tynninghame is all too short to do justice to the gardens under his care, which contain a fine collection of ornamental and flowering trees and shrubs, and herbaceous borders; and it may be that to his training under Mr. THOM and Mr. DOUGLAS is to be attributed his full knowledge of hardy fruits and his love of the Carnation, which he grows largely and well. Earnest, observant, and painstaking in all he does, his services are much sought after in the North in judging hardy fruits. Mr. BROTHERSTON contributes largely to current horticultural literature. He is the writer of *The Book of the Carnation*, recently published by Mr. JOHN LANE, and was the winner of the 1st prize in an essay competition on the cutting, arranging, and keeping of cut flowers in water, offered last year by Mr. and Mrs. MARTIN WHITE, of Balruddery, Dundee, under the auspices of the Royal Caledonian Horticultural Society.

ON THE EFFECTS OF GRAFTING ON THE VINE.—In a recent number of the *Comptes Rendus* is a paper by MM. LUCIEN DANIEL and CH. LAURENT, mentioning the results of their experience in Vine-grafting. "M. JURIE," say the authors, "has already shown that certain grafted Vines have shown variations in their habit and foliage; that the form of their bunches has been more or less modified in sympathy with the stock, and that this influence extends even to the seeds." The paper is a report on the effects of grafting on the anatomical structure of the grafts, and on the wines made from the berries. The following are the conclusions arrived at: "1. It is seen that the internal anatomy of the Vine varies under the influence of grafting exactly as the external appearance does. 2. The wine from grafted Vines differs noticeably from wine from ungrafted Vines, and the variations of its several constituents depend on the nature of the stocks. This change may be beneficial or injurious according to circumstances; that is, there are grafts that cause improvement and grafts that are detrimental. 3. Variations in the constituents of the wine from the same grafted Vine are not necessarily of the same nature. It is not, therefore, possible to select a single constituent—alcohol, for example—as a criterion of improvement."

HOLLY-TREE DENUDED OF BARK.

THE tree illustrated at fig. 5 [is growing] in moorland on the estate of Balthayock, Perthshire, the country seat of R. Wyllie Hall, Esq. Several stems in the foreground are in each case entirely denuded of bark for a length of about 12 to 18 inches. Not only is this so, but the exposed wood is quite dead and decayed to a depth of about half an inch all round. There is no mistake in the matter, for since the photograph was taken Mr. Bell, the forester on the estate, has, at my request, kindly sent me a 3-feet length of the basal portion of the trunk, seen at the extreme left of the photograph. The barking appears to have been done by rabbits eighteen or twenty years ago, yet every one of the several stems is carrying well-developed branches and healthy foliage. The main extremities of the branches are, however, in a considerable number of cases quite dead, and very probably there is no real growth, but rather a continuous but slow loss of weight. On the other hand, the stem at 4 feet above ground appears to have gained in thickness, so that an active cambium is apparently adding new wood annually. D. Storrie, Dundee.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

BLACKBIRDS TROUBLESOME ON A LAWN.—For the last three weeks the blackbirds here have been making themselves objectionable by pecking small round holes in the lawn, about an inch or two in diameter and the same in depth. Observation has shown that the birds are seeking for worms. They hop about, and on discovering a likely worm-hole energetically set to work with their beaks to unearth the worm, scattering fragments of turf around in their efforts. Till the

pretty. The *Centranthus* has a faculty of springing up from self-sown seeds in spots where it would appear to be an impossibility for the roots to spread or find sustenance. On the platform of a little station near Plymouth I saw, last year, a large plant of *Centranthus*, with several flower-stems about 3 ft. in height, that had sprung from a crack between the wall and the platform-tiles into which it was difficult to insert the blade of a knife. Another plant, with three stems about 18 inches in length, I saw the other day growing out of the mortar of a comparatively recent railway-bridge, about 10 feet from the ground. S. W. Fitzherbert, S. Devon.



FIG. 5.—HOLLY-TREE PARTLY DENUDED OF BARK IN PERTHSHIRE

birds were seen in the act the cause of these small holes was rather a puzzle, as the lawn in former years does not seem to have been disfigured in this way. Is this delving for worms a common practice with blackbirds? J. P., Carlisle, June 28.

CENTRANTHUS RUBER.—This plant, generally known by the name of Red Valerian, is now very effective in the South-west of England, where long stretches of railway-embankment are pink with many thousands of flowering plants, and old walls and cliff-faces are mantled with the same tint. Two varieties often occur in a wild state, one being pure white and the other deep crimson; but, as a rule, the pink type is dominant. The other day, however, I saw the almost precipitous side of an old, disused quarry in the neighbourhood of Torquay covered with the three forms in about equal numbers, and the effect was surprisingly

HIMALAYAN RHODODENDRONS.—In connection with the subject of Sir John T. D. Llewelyn's lecture at the last meeting of the Horticultural Club, I should like to mention the following facts bearing on the spring-tenderness of these species generally in this country. The late Capt. H. A. Mangles, whose labours in cultivating and raising Himalayan and Bhotan Rhododendrons from seeds is well known, was aware of the unsuitableness of the English climate for the cultivation of many of the species, our mild winters and the lack of snow or its early melting inducing early growth, which got cut by spring frosts. On the occasion of a visit paid to his garden at Vale Royal, Haslemere, early in the eighties, he mentioned to the writer of this note his practice of retarding the growth, and consequently flowering of his plants, by erecting mat shelters for them early in the winter, which shaded them from

sunshine. By so doing, and by planting the earlier growers on the north side of high walls, he succeeded in preserving most of his plants from injury. It would be undoubtedly a great gain to our gardens if we could introduce the hardier species mentioned by Sir G. Watt as being found in the mountainous districts of Burmah, China and Assam, seeing that these and hybrids from them would be very suitable for cultivation in the warmer parts of these islands. *F. M.*

ARUNDINARIA NOBILIS.—I was much interested in Dr. Stapf's foot-note to my remarks on *Arundinaria nobilis* and *A. Falconeri*, which in the South-west of England have for many years been grown as distinct species. I read Dr. Stapf's original article with care, and noted that he held the two Bamboos grown under these names to be identical. As I consider it to be eminently desirable that growers should know the correct names of the plants they cultivate, and that this knowledge should not be merely confined to botanists, I penned my note, which, as Dr. Stapf remarks, has had the effect of confirming his conclusions; for it appears that the *Arundinaria nobilis* sent by Mr. Rashleigh was really *A. Falconeri*, and that his *A. Falconeri* was *A. falcata*. It would be interesting to know what the Bamboos grown at Menabilly under the name of *Arundinaria falcata* really are, for they appear to be different from those grown there under the name of *A. Falconeri*, now said to be *A. falcata*. In the letter from Menabilly, referred to in my former note, occurs the passage—"Of *A. falcata* we have six nice specimens, about 16 feet high; the culms are a dark-green colour with the white down in their young state, and are more erect in habit than those of *A. Falconeri*, while the plant is a stronger grower." *S. W. Fitzherbert.*

ARETHUSA SINENSIS (see p. 403).—I believe that the plant which Mr. Elwes sent to Kew was one which I sent him; if so, it came originally with an imported plant of *Cypripedium bellatulum*. *C. W. Strickland, Hildenley, Malton.*

COLOURING OF APPLES, AND SOIL NITRIFICATION.—It has generally been believed that colour in Apples and other fruits is due to sunshine; and the more intense the light, the higher the tint, irrespective of the degree of nitrification taking place in the soil. There are some varieties that invariably take on high colour, either red or russet, in the North, where Apples generally are paler than in the South. I would instance the Red Calville, Calville d'Automne, Mère de Ménage, Manx Codlin, Kerry Pipin. This occurs whatsoever the character of the season. The same consistent and regular colouring occurs in fruits of the Peach, Apricot, Plum, Cherry, Currant, and Gooseberry. Exceptions are Strawberries of certain varieties, and Pears, and perhaps Figs, which are apt to be deficient in tint in wet, cloudy, unfavourable weather if this be long continued; and this deficiency is nearly always accompanied by lack of flavour. Before gardeners pin their faith on nitrification within the soil having influence on colour, something more than quasi-scientific assertion is needed, and the subject is well fitted for experiment in the new Royal Horticultural Society's garden at Wisley. *F. M.*

GARDENERS' MUTUAL IMPROVEMENT SOCIETIES.—Should any author at any time undertake the work of writing a history of the development of horticulture during the past and present centuries, he certainly will have to take special note of the origin and growth of the movement, which seems to be rapidly culminating in the formation of a gardeners' society for mutual improvement in every district or centre where gardening is practised. The dominating factors of this movement are, the desire for more intimate social intercourse between those engaged in the same vocation, a natural wish to have opportunities to converse with each other concerning gardening, and not least, an undoubted longing to obtain from each other such professional knowledge as is helpful for mutual improvement. There is perhaps no other vocation which incites individuals thus to come together for mutual instruction and mental welfare as gardening

does. At some future time perhaps these qualities may become important factors in gardening progress. *A. D.*

THE LARGE-FLOWERED MIMULUS.—One can sometimes find on a costermonger's barrow a plant that is well worthy the few pence paid for it. A few days ago I was able to secure in this way a few very fine forms of the Giant Mimulus, which seemed to recall something of the high level to which the flower had been brought a great many years ago, when it received more attention at the hands of the florist than it does in the present day, for in addition to their great size, the flowers were of fine shape and brilliantly marked. Evidently these Mimulus represented a strain which is grown for market, and kept by careful seeding up to a high degree of quality. The plants, when well rooted, were potted, the flower-buds being picked off so as to encourage a free growth; they will shortly have a shift into 32-sized pots, and as soon as established they will be stood out in the open and permitted to grow and bloom freely. Being of a somewhat brittle nature the main shoot should be securely fastened to a stick, and the side branches also made secure. I have found a few of the fine sprays of wood an excellent support to the side shoots. In hot, dry weather the plants need plenty of water, and being potted in rich soil, they scarcely need the aid of a fertiliser during the season, and being in the open-air they are much less liable to attacks of green-fly than when wholly cultivated under glass. Two or three pods of seed for future sowing might be saved from each plant, in order to keep up the high quality of the strain, or a particular variety might be propagated by means of cuttings, which strike readily enough. Up to recently it was possible to find named varieties of Mimulus in some popular plant catalogues; probably they have become lost to cultivation. An excellent Mimulus for pot culture is a large hose-in-hose yellow variety known as Golden Queen. The two large corollas, one issuing from the other, are pure yellow, and they are produced with great freedom; and as it does not produce seeds, there is no check in the succession of bloom from this cause. It is a strong grower, and most free branching. It is evidently a form of *M. luteus*, and quite hardy. So far, I have grown it only in pots, under glass, but this season I have quite a large plantation of it in the open; the plants are fast coming into bloom, and it may mature a few seeds in the open ground. Hose-in-hose forms of the Mimulus will sometimes put in appearance among seedlings of ordinary strains, but, like the hose-in-hose Primrose and Polyanthus, they produce but very few seeds, and only a small percentage of the seedlings can be depended upon to assume the hose-in-hose forms. Nothing that I have seen of this character among the Mimulus can compare with Golden Queen for size and beauty, and especially for floriferousness. *R. D.*

PLANT NOTE.

CALCEOLARIA VIOLACEA.

This pretty shrubby *Calceolaria* has been in flower for some weeks in the south-west, where it is quite hardy. Though a native of Chili, it is evidently hardier than its habitat would lead one to suppose, for I understand that it has lived in the open with the late Mr. Wolley-Dod in Cheshire. The largest specimen that I know of is in a garden in the neighbourhood of Truro, where it is 4 feet in height and as much through, while slightly smaller examples are comparatively common in South Devon and Cornwall. The helmet-shaped blossoms are very beautiful if the interior is inspected. The ground colour of this is pale mauve spotted with purple, while down the centre of the lower lip runs a broad band of bright yellow spotted with chestnut. It was introduced more than fifty years ago, and was formerly styled *C. Jovelliana*. Where the climate is too cold for planting it out permanently in the open, it makes a handsome greenhouse plant. It may be easily propagated from cuttings of the young wood. *S. W. Fitzherbert, S. Devon.*

FLORISTS' FLOWERS.

THE TIME TO LIFT TULIPS.

THE early lifting of Tulip bulbs is now generally recognised as a wise procedure. The skin is thereby helped to adhere closely to the bulb, and to gradually assume the pale chestnut colour indicative of the fully ripened process. As soon as the flower fades the bulbs rapidly ripen for removal. The fine rectified and breeder Tulips of the florists are generally lifted from the third week in June to the first week in July, but something depends upon the character of the season. It is not necessary the foliage shall have completely died down, though some wait for this stage. A very good test is applied by the florists—"So long as the clear stem below the flower will snap sharply on being bent, the time for lifting has not come, but when the stems will bend double without snapping off, the bulbs may be taken up."

The root fibres and foliage are no longer of any assistance to the newly-formed bulb, but they assist the development of the seed-pod if one has been fertilised for seed purposes. All that remains of the old bulb is a loose skin or two about the new one; it is possible to remove it without endangering the proper ripening of the seed pods; the new bulb may appear white, but the ripening process can be completed above ground as well as below it; its thin skin will thicken and take on colour; it will cling closely to it, and not peel off, as is frequently the case with bulbs lifted late. Heavy summer rains do the bulbs no good; the late lifted ones have had their skins thickened and hardened underground, but they quietly shed them, and so lose force by evaporation.

The florist takes the greatest care of his bulbs when lifted; they are placed in drawers having receptacles answering to the position of the bulb in the bed. As a rule the Tulip cabinet is so constructed that air can circulate among the drawers, ensuring cool and dry conditions for the bulbs.

In a forcible passage in one of his interesting papers on the Tulip, the Rev. F. D. Horner reminds us that though the Tulip bulb may be lying by in its drawer apparently at rest—though life may appear dormant, there is yet nothing of the character of suspended animation. "It is full of ripe and ready active juices, and those are stirred by such nerve and pulse as may be in vegetable life, and are used at once—though invisibly, in building up tissue and structure of next year's foliage, stem, blossom, and seed-pod, together with, least among the hidden wonders, the germ of the bulb to follow. Cut through the bulb when nearly ripe in June, and you shall see nothing but so many fleshy, juicy layers, united on a base or radical plate. But watch the bulb from time to time as autumn draws on, and you will see that its very shape has been gradually altering. Instead of losing flesh it seems to have gained it, and its tissues are fuller of sap than ever. They are tense and bright and fervent, while at the vital base of the bulb, its most vulnerable part, the coronal of fibres, with the point of every future rootlet, almost pricking through, is very prominent. Probably the pale tip of the young shoot, the 'guard leaf,' as it afterwards becomes, is already visible. But if not, dissection would reveal every leaf of the future foliage. Every petal of the coming flower, with every chance notch and imperfection of shape prefigured in it, every stamen, and the seed-pod, with its triple stigma. Only at this early stage the proportions of the various parts are not in their final order, for the embryo stamens are larger than the petals of the unborn flower, and there is little or no visible stem close by, and upon the radical

SOCIETIES.

ROYAL HORTICULTURAL.
THE LAST OF THE DRILL HALL.

JUNE 28.—The Society held on Tuesday last what it is believed will be the last meeting it will hold in the "Drill Hall." The last show was a fair example of the type of exhibition that has been held there during the past few years. The Hall was well filled with gay groups of flowering and foliage plants, fruits, and cut flowers, and there was a large attendance of visitors. Thus the Fellows have terminated an acquaintance with a Hall that afforded limited conveniences, even as a mere exhibition hall. It may be admitted that, although latterly it has been the best abused hall in London, it has nevertheless served well the purposes for which it was intended; and it should be remembered that it was recommended as a temporary expedient only, by the gentlemen deputed to find a hall for the Society's meetings, when the exhibition buildings at South Kensington became unavailable.

The Society's next exhibition will be held in Lord Ilchester's grounds at Holland House, Kensington, on July 12 & 13, and the following one in the new Hall in Vincent Square, Westminster, which will be formally opened by their Majesties the King and Queen, on Friday, July 22.

Floral Committee:

Present: W. Marshall, Esq. (Chairman); and Messrs. Geo. Paul, C. T. Druery, H. B. May, R. Dean, Jas. Hudson, W. Howe, R. Hooper Pearson, John Green, W. Bain, A. Perry, C. Jeffries, R. W. Wallace, C. E. Pearson, R. C. Notcutt, W. Cuthbertson, C. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, C. Bick, J. W. Barr, E. T. Cook, George Gordon, and John Jennings.

The whole of one side of a centre table was occupied with a collection of *Streptocarpus* varieties, shown by Lord ALDENHAM (gr., Mr. E. Beckett). Many of the plants were in 8-inch pots, and bore strong, well-developed foliage, but carrying large clusters of flowers in many pretty shades of colour. The group deserves praise from a cultural point of view, and the strain is certainly a very fine one (Silver-gilt Flora Medal).

A charming group of Roses was displayed in vases by Messrs. PAUL & SON, the Old Nurseries, Chessington, N. Most of the types were included, the whole group presenting a very fresh and bright appearance, with the colours pleasingly blended. This large group was one of the finest in the hall (Silver Flora Medal).

Another lovely group of Roses was set up by Messrs. B. R. CANT & SONS, Colechester, all in admirable condition, and including most of the types of this popular flower. Ben Cant, Mme. Abel Chatenay, Liberty, and the new pillar Rose Maharajah, are a few varieties that impressed us as being especially good (Silver-gilt Banksian Medal).

MESSRS. GEO. BUNYARD & CO., Maidstone, Kent, contributed vases of Roses, principally climbing varieties, Bardon Job, macrantha, Perle des Ronges, Reine Olga de Wurtemberg, Liberty, Killarney, &c. The same firm also set up a number of spikes of Delphiniums.

MR. A. R. UPTON, Hardy Plant Nursery, Millmead, Guildford, staged nine pots of Rose "Zephyrine Drouhin," arranging vases of cut flowers of the same along the front. The bright rosy-pink flowers are very pleasing, and possess unusual perfume. It is an excellent climbing variety.

MESSRS. W. & J. BROWN, Stamford, set up a number of vases of Rose blooms, principally of the pillar kinds, and a number of pot-plants of zonal Pelargoniums of the Cactus type of flower. Some *Verbenas* and *Heliotropes* were also included in this display.

FRANK LLOYD, Esq., Coombe House, Croydon (gr., Mr. M. E. Mills), staged a group of hybrid Begonias, the shades of colour being chiefly of salmon and salmon-pink. Some were arranged in baskets, for which this type are eminently adaptable; some of them would also commend themselves as bedding plants, being very free-flowering and carrying their blooms well above the foliage (Silver Flora Medal).

MESSRS. JAMES VEITCH & SONS, Chelsea, brought English Iris in many curious and handsome varieties. A pleasing strain of Sweet William (*Dianthus barbatus*) was also shown with these, including a large Auricula-

eyed variety. Another group set up by the same firm contained some of Messrs. VEITCH's recent introductions, including several pleasing new Roses, of which the variety *Lney* is commendable. *Cornus Kousa* was shown, its white flowers much resembling those of a Clematis. *Streptocarpus* in this group were good, the variety *S. achineniflorus albus* being a handsome white variety, with flowers of good form. *Bougainvillea Sanderiana* was shown well (Silver Flora Medal).

MESSRS. KELWAY & SON, Langport, Somerset, had a remarkable collection of Delphiniums, quite the best in the Drill Hall. The spikes were massive, flowers large, and the colours varied and pleasing. Most of the varieties were named ones. Some good Gaillardias were also shown by Messrs. Kelway (Silver Banksian Medal).

MESSRS. H. CANNELL & SONS, Swanley, Kent, staged twenty-one varieties of Sweet Peas of the Cupid type, dwarf, well-flowered, and of pleasing colours. Bridesmaid, Mauve Queen, Beauty (blush-rose), Captain of the Blues (dark blue), and Her Majesty (carmine), are some of the best of those shown (Silver Banksian Medal).

MR. H. B. MAY, Upper Edmonton, showed eighty-two varieties of *Codiceums* (Crotons), set up very tastefully, the variety of form and colourings in the leaves being much admired. These plants were unusually well cultivated specimens (Silver-gilt Banksian Medal).

MR. L. R. RUSSELL, Richmond Nurseries, Richmond, staged a large group of well-grown ornamental stove and greenhouse plants, some large Palms at the background enhancing the effect. *Ficus Parelli*, good plants of *Dracena Sanderiana*, and *D. norwoodiensis* were noticed; *Marantas*, *Caladiums*, *Codiceums*, *Alocasias*, and *Aralias*, all well grown and prettily coloured, together with other members of this section of plants, completed a fine display, to which an edging of *Caladium argyrites* imparted a pleasing finish (Silver Flora Medal).

MESSRS. J. CHEAL & SONS, Lowfield Nurseries, Crawley, set up a group of flowering and ornamental foliage shrubs and trees, working in the group some cut flowers from the herbaceous border. *Phlox frutescens* was noted in this group with its Buddleia-like foliage and dense corymb of yellow flowers.

MESSRS. R. WALLACE & CO., Kilnfield Gardens, Colchester, had an extensive collection of hardy flowers. *Ixias* were shown well. Several species of *Lilium* were shown, including a nice batch of *L. Hansonii*. Good *Irises* were included; *L. Monnierii* is of exquisite yellow colour. *Centaurea pulchra major*, *Aconitum Lyneatum* and *Brodiaea coccinea* were also noticed in this large collection (Silver-gilt Banksian Medal).

Another large group of hardy flowers was staged by Mr. AMOS PERRY, Winchmore Hill, London, N. Here were many choice *Liliums*, *Ixias*, *Campanulas*, *Delphiniums*, &c. Some hardy *Nymphaeas* were presented, among which were *N. Gladstoniana* (large white) and *N. Laydekeri* lilacea. *Lilium pomponium* was good; *Ornithogalum pyramidale* was attractive, on account of its powerful odour (Silver Flora Medal).

MR. M. PURCHARD, Christchurch, Hants, included in his collection *Philadelphus Lemoinei maculatus* and *Pimpinella magna rosea*, for which awards were obtained; *Iris Kienperfi*, *Lilium Martagon album* (fine group), and *Potentilla California* and *P. Congo*, the latter of striking scarlet colour. *Coriaria japonica* was shown covered with its pretty red-coloured fruits (Bronze Flora Medal).

A group shown by Mr. R. C. NOTCUTT, Wood's Nursery, Woodbridge, included *Gillenia trifoliata*, *Coreopsis grandiflora*, *Hedysarum coronarium*, *Sidalcea candida*, &c.

MESSRS. JOHN PEED & SON, West Norwood, London, set up trays of alpine plants and cut hardy flowers in vases, trays of Roses, and tuberous-rooted Begonias.

MESSRS. WM. CUTHBUSH & SON, Highgate, London, N., set up a large group of herbaceous flowers—*Phlox decussata* in variety, *Paeonies*, *Liliums* (including *L. Krameri*), *Eremurus* and *Delphiniums*. The same firm also displayed a batch of Carnations. These were all of the Souvenir de la Malmaison type, with the exception of a few border varieties at either end. Duchess of Westminster, an improvement on the old double pink variety, was in good condition. Robert Burns, prettily displayed in a vase; Nell Gwynne (good white), Grace (fine pink), Lady Grimston (striped bright pink), were some of the finest shown. Messrs. CUTHBUSH also staged a new *Verbena* named Princess of Wales, with flowers of a deep heliotrope colour. This should prove an acquisition for bedding purposes (Silver-gilt Banksian Medal).

ALPINE GARDEN.

SAXIFRAGA GUILDFORD SEEDLING.

I HAVE tried several of the mossy Saxifragas with coloured flowers, and have found this variety to be the richest coloured of and certainly quite distinct from all others in the section. This plant is the latest of these coloured forms to flower. It is presumably a chance seedling from *S. Rhei*, the leaf characters being nearly identical. The plant is from 3 to 5 inches high when in flower, the stems being distinctly glandular. The peduncles, calyces, and flower-buds are reddish-crimson; the stem-leaves $\frac{1}{2}$ an inch long, acutely pointed and linear, even to the rosettes. In other kinds the upper stem-leaves are ovate, acuminate; the lower ones being twice or thrice cleft. I give this description because of the existence of a spurious kind. A site which is not exposed to full sunshine is best for this variety owing to the intensely coloured blossoms. E. J.

THALICTRUM ANEMONOIDES.

Anemone thalictroides, "Anemonella," "Rue Anemone," &c., are all names by which this dainty little *Thalictrum* is known in America. It is a curious plant with a thickened root-stock, somewhat resembling an *Anthericum*, its many slender stems bearing white, *Anemone*-like flowers with white pistils and yellow anthers. The individual flowers are less than an inch across, and arranged in little verticils of five, surrounded by a collarette of 3-lobed, *Adiantum*-like leaves on slender, wiry petioles. It is in no respect a rock plant, but one can grow it well amid small-habited Ferns in the cooler, semi-shaded sites of the rock-garden in a compost of grit, leaf-soil, or peat. It can also be grown well in a shady border. Old-established tufts, often a foot through in good specimens, are remarkably pretty, and in April and early May, when they are almost covered with flowers, no better plant can be desired than this little *Thalictrum* for frame cultivation in pans, treating them as one would treat *Epimediums*. It is quite hardy, and drought seems to be the only condition it cannot withstand. M.

THE ROSARY.

ROSE COUNT AMÉDÉE DE FORAS, T.

The *Journal des Roses* for April publishes a coloured plate of this Rose, sent out by M. Gamon of Lyons in 1900. It is described as of vigorous bushy habit, very free-flowering, and almost constantly in bloom in the season. The flowers are large, open well, very fragrant, and of a creamy-yellow colour shaded in the centre with rose-pink; the buds are elongate, conic. Our attempts to describe the colour pale before those of the writer in our contemporary, who notes the colour as "rose de chine, ombré d'aurore, centre nuancé de rose pêche, parfois crème saumoné."

Messrs. BARR & SONS, 11, 12, and 13, King Street, Covent Garden, London, had a collection of hardy cut flowers in vases, some spikes of Delphiniums being a prominent feature. Ixias, Irises, Peonies, Poppies, Heucheras, and similar flowers, were the principal features, and a collection of English Irises was included (Silver Banksian Medal).

Mr. R. LAIDLAM, the Shirley Nurseries, near Southampton, staged Pinks, Campanulas, Aquilegias, and a few other hardy plants.

Messrs. JOHN LAING & SONS, Forest Hill, London, S.E., showed a group of Gloxinias; also a group of stove and greenhouse foliage plants, Caladiums, Codiaeums, Cordylines, Begonia Rex, Alocasias, &c.—all well grown and of nice colours (Silver Banksian Medal).

A splendid collection of English Irises was shown by Messrs. WM. BULL & SONS, Chelsea. The colours in this group were as showy and beautiful as a collection of Sweet Peas.

Mr. CHAS. TURNER, Royal Nurseries, Slough, staged a number of vases of Pinks and a pan of Dianthus fragrans "Little Gem," with miniature white flowers.

Messrs. R. & G. CUTHBERT, Southgate, Middlesex, brought a collection of Gladioli; *G. roseo-maculatus* was good, and the old variety insignis occupied the background (Bronze Flora Medal).

Messrs. DOBBIE & CO., Rothesay, set up a number of Pansies and Violas, demonstrating the great advance which has been made in these flowers. Effie is a new variety, having a striking flower with a creamy centre, and a magenta-coloured margin; James Dodd is a good show variety. Adjoining was a group of Cactus Dahlias (Silver Flora Medal).

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, showed a number of Carnations, principally of seedling varieties. On another table this firm showed other Carnations, principally "Malmaisons," including a true yellow variety of this type, named Miss Alexandra James.

Messrs. SANDER & SONS, St. Albans, exhibited some very pretty hybrid varieties of Begonias obtained from B. Rex and B. Bowringiana; also a capital plant of the last-named species. "Our Queen" and "His Majesty" have been illustrated in these columns, and in addition a pretty variety named Mrs. H. G. Moon was shown on Tuesday.

Mr. H. MARKHAM, Wrotham Park Gardens, Barnet, exhibited a Sweet William named Elizabeth, of a peculiar shade of pink colour. The variety was recommended an Award of Merit on July 11, 1899.

Awards.

Codiaeum (Croton) Mrs. H. B. May.—This is a narrow-leaved variety of green and yellow colours. The leaves are spirally twisted to some degree, and have a pretty arching character. Shown by Mr. H. B. May (Award of Merit).

Carnation John.—This is a border variety with very large flowers of pale sulphur-yellow colour, and possessing a good calyx. Shown by S. MORRIS, Esq., Wretham Hall, Thetford, Norfolk (Award of Merit).

Delphinium Norman Hirst.—This variety has long bold spikes of somewhat closely-packed flowers. The flowers are of large size, purple in colour, with shading of blue, and having a lemon-coloured centre. Shown by Messrs. KELWAY & SON (Award of Merit).

Delphinium Mrs. J. Bradshaw.—In this variety we welcome a type in which the flowers are produced less thickly upon the spike. They are of large size, and pale blue in colour. The general appearance is much more graceful than that of the more densely flowered varieties. Shown by J. BRADSHAW, Esq., The Grange, Sontigate, N. (Award of Merit).

Philadelphus Lemouinei maculatus.—This is a most effective variety, remarkable from the fact that at the base of each petal there is a small blotch of purple colour, which forms a ring of purple around the centre of the flower. It is an exceedingly distinct variety, and will have a good effect in the pleasure-grounds. Shown by Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. Jaine), and by Mr. PRITCHARD, Christchurch Nurseries, Hants (First-class Certificate).

Psilacella nympha rosea.—A rose-coloured variety of a well-known British flowering plant, suitable for the herbaceous-border or wild-garden. Shown by Mr. PRITCHARD (Award of Merit).

Sweet Pea Cupid.—Messrs. H. CANNELL & SONS showed a number of varieties of the prostrate Sweet Peas, and obtained an Award of Merit for the strain.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair), Baron Schroder, Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, J. G. Fowler, H. Little, W. H. White, H. A. Tracy, W. Boxall, J. W. Potter, R. G. Thwaites, W. Bolton, G. F. Moore, F. W. Ashton, A. A. MacBean, H. T. Pitt, F. A. Rehder, W. A. Binney, J. Colman, J. Douglas, W. Cobb, H. Ballantine, and H. M. Pollett.

From The Right Honble. Lord ROTHSCHILD'S gardens, Tring Park (gr. Mr. A. Dye), came a very remarkable and extensive group of Masdevallias, including upwards of fifty species, varieties and hybrids, several plants of some of them being present. The showiest of the hybrids were *M. × Rushtoni*, *M. × Gelengiana*, *M. × Cassiope*, *M. × Hebe*, *M. × Henrietta*, *M. Bocking* hybrid, and *M. × Courtlandiana*. Among the species were noted forms of *M. chimera*, one with nearly black flowers; *M. racemosa*, *M. radiosa*, *M. gemmata*, *M. O'Brieniana*, *M. simula*, *M. Carderi*, *M. Davisii*, *M. campyloglossa*, varieties of *M. ignea*, *M. caudata*, &c. With the Masdevallias were several singular *Pleurothallis*, such as *scaphosepalum gibberosum*, *oethodes*, and *punctatum*; *Phrysosiphon Loddigesii*, *Aërides japonicum*, *Luisia japonica*, the pretty pink-tinted *Disa venosa*, flowering for the first time under cultivation, and other singular species. At the back were the showy *Laelio-Cattleya × Mauve Queen*, *L.-C. × Aphrodite*, the new *L.-C. × Charles Linnaeus* (*Gottoiana × Warneri*), and the fine Tring Park variety of *Laelio-Cattleya × Dominiana* (see Awards). For the group a Silver Flora Medal was awarded.

Mrs. ERNEST HILLS, Penshurst (gr., Mr. Geo. Ringham), staged a good group of excellently well-grown *Miltonia vexillaria* of the best large-flowered type, for which a Silver Banksian Medal was awarded.

Messrs. SANDER & CO., St. Albans, staged an effective group, in which were many varieties of their fine strain of *Laelio-Cattleya × Martinetti*, *L.-C. × blancheyensis*, *L.-C. × Duchesnei*, *L.-C. × Aëis*, *Laelio × Yula*, *L. × cinnabrosa*, and other hybrids. Also in the group were a fine specimen of a distinct form of *Dendrobium superbum*, a pretty white-and-yellow *Thunia*, a large form of *Acineta Humboldti*, and other showy Orchids (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS, Chelsea, showed a group of varieties of *Laelio-Cattleya × Canhamiana*, *L.-C. × Wellsiana*, *L.-C. × eximia*, *L.-C. × Dominiana langleyensis*, *L.-C. × Martinetti*, *L.-C. × Vesta*, *L.-C. × Aphrodite alba*, *Cattleya × Eros*, the white *C. Mossie Wageri*, and a very distinct white form of *Sobralia × Veitchii* (Silver Banksian Medal).

Messrs. HUGH LOW & CO., Enfield, staged a good group, in the centre of which was a selection of *Phalaenopsis*, including several *P. amabilis Rimestadtiana*, *P. × leucorrhoda*, and *P. Aphrodite*. Other good things noted were *Cattleya Mendeli*, with sixteen flowers on a comparatively small plant; *C. intermedia alba*, varieties of *Laelio-Cattleya × Canhamiana*, one with seven flowers; *L.-C. × Arnoldiana*, a very finely-coloured *Laelia tenebrosa*, *Oncidium divaricatum*, *Masdevallia melanoantha*, &c. (Silver Banksian Medal).

M. CHARLES VUYLSTEKE, Loochristy, Ghent, sent two forms of his handsome purple-blotched *Odontoglossum × ardentissimum*, *O. × coccineum*, *O. × mirificum*, *O. × bellatulum*, and a very pretty *O. × Harryano-crispum* (Silver Banksian Medal).

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), showed the handsome *Odontoglossum crispum Britannia*, a finely formed flower, purple at the back, and with very heavy purplish-brown markings on the sepals and petals. Also *Cypripedium × vexillario-fo*, a singular hybrid which shows *C. Fairieanum* derived through *C. × vexillarium* in a very marked degree.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cattleya Mossie* "Miss Etheldreda Harting," a charming white flower of fine proportions, bearing slight pale purple markings in front of the yellowish disc; and *Laelio-Cattleya × Pallas*, Westfield variety, a good bright rose-coloured flower with dark claret-crimson labellum.

C. J. LUCAS, Esq., Warnham Court (gr., Mr. Duncan), sent a light form of *Laelio-Cattleya × Martinetti*.

Messrs. STANLEY, ASHTON & CO., Southgate, showed *Scuticaria Dodgsoni*.

J. BRADSHAW, Esq., Southgate (gr., Mr. Whitelegge), sent *Lycaëte tricolor*, and a white form of it.

AWARDS OF MERIT.

Laelio-Cattleya × Dominiana, Tring Park variety (*L. purpurata* (dark variety) × *C. Dowiana*), from the Right Hon. Lord ROTHSCHILD, Tring Park (gr., Mr. A. Dye).—A magnificent and finely-coloured hybrid with large flowers, the sepals and petals of which are light purplish-rose; the broad and strongly crimped labellum dark ruby-purple, with some fine gold lines in the throat.

Cattleya Mossie alba, Tracy's variety.—A very singular white form, with flowers in shape resembling a white *Cattleya labiata*. From Mr. H. A. TRACY.

BOTANICAL CERTIFICATE.

Saccolabium gracile, from the Hon. WALTER ROTHSCHILD, M.P.—A very elegant little species from Ceylon, with slender growths and long decurved inflorescence of many small white flowers. It is probably the first plant of the species to flower under cultivation.

Cryptophoranthus Lehmanni, from the Hon. WALTER ROTHSCHILD, M.P.—A tufted plant bearing dark purple leaves, and with some resemblance to *C. Dayana*, though the singular hawk's-head-like flowers are longer, yellowish, densely spotted with dark chocolate-purple.

DISBUDDING OR RESTRICTING THE FLOWERS OF ORCHIDS.

At the commencement of the meeting, as previously announced, NORMAN C. COOKSON, Esq., moved—

"That the resolution disqualifying plants that have been disbudded be rescinded, and that in future reasonable disbudding be permitted, bearing in mind the strength and size of the plant and general appearance of the spike."

After discussion, an amendment that the rule as at present existing do stand, was put, and carried by the casting vote of the Chairman, the voting (eleven for, eleven against) being equal.

Disbudded Orchids therefore, as usual of late, will not be granted Awards, though they may be exhibited.

Fruit and Vegetable Committee.

Present: George Bunyard Esq. (Chairman), and Messrs. Jos. Cheal, W. Bates, S. Mortimer, A. Dean, E. Beckett, T. Coomber, Geo. Kelf, H. Markham, P. C. M. Veitch, H. Parr, J. Willard, Geo. Wythes, H. Somers Rivers, and A. H. Pearson.

A very meritorious collection of a dozen Pineapples and some Strawberries was shown by Lord LILANGAT-ROCK, The Hendre, Monmouth (gr., Mr. T. Coomber). The Strawberries included the varieties known as The Laxton, Leader, and Royal Sovereign, and were all of unusual size. The exhibit was awarded a Silver-gilt Knightian Medal.

Fruits of the "Papaw" (*Carica papaya*) were shown by JAS. EPPS, junr., Norfolk House, Beulah Hill, West Norwood, who had cultivated them (Cultural Commendation).

Messrs. LAXTON BROTHERS, Bedford, exhibited a large quantity of Strawberry fruits of great size and high colour. The varieties included The Laxton, Bedford, Champion (a cross from Noble and Sir Joseph Paxton), and Reward, described under "Awards."

Messrs. H. CANNELL & SONS exhibited a dish of Edward VII. Peas, the pods of which were of perfect form.

AWARDS OF MERIT.

Strawberry Duke.—This variety was shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, and has been obtained from a cross between Frogmore Late Pine and Veitch's Perfection. The fruits are sometimes wedge shaped, at others, conical, but usually of irregular outline. They are very large in size, of rich red colour, and good flavour. From the specimens and plants shown the variety appears to be a prodigious cropper.

Strawberry "Reward."—This variety was shown by Messrs. LAXTON Brothers, who displayed a large quantity of richly-coloured fruits. It is described as a cross from Royal Sovereign and British Queen. The fruits are large in size, wedge-shaped, occasionally conical, very juicy, and of good flavour.

The Lecture.

At the afternoon meeting it was announced that the new Hall would be opened by the KING and QUEEN on July 22. A large number of new Fellows (71) was elected. A paper by M. VIVIAN MOREL, on "The Hybridisation of Roses," was read by the Assistant Secretary.

RICHMOND HORTICULTURAL.

June 29.—The thirtieth annual flower show of the above Society was held in the Old Deer Park, Richmond, on the above date, in glorious summer weather. The Roses made a grand display, the general quality being of a high standard. Handsome groups of plants were shown in the marquee appropriated to that class, the 1st prize for a group of plants in or out of flower being won by Hon. Mr. Justice SWINFEN-EADY with a circular group containing handsome foliage and flowering plants tastefully arranged and well grown. Several commendable non-competitive groups were also set up in this tent. Mr. L. R. RUSSELL had stove foliage plants; Messrs. WILLS & SEGAR had facing the entrance a group of Palms, Codieums, Nepenthes, Alocasias, &c., with a fine batch of Erica ventricosa magnifica towards the foreground. Mr. WILLIAM THOMPSON, nurseryman, Richmond, had a semi-circular group, the centre of which was Palms, Acer Negundo, &c., with an edging of Astilbe japonica (Spirea), Arrhenatherum bulbosum fol. var., and Liriope striata, the other half of the circle being completed by Mr. W. IETON, Putney, with Azaleas, Caladiums, Boronias, &c., who had a nice batch of Lily of the Valley in the centre.

The west end of this tent was furnished by a group of Lilium auratum, with a ground-work of Astilbe japonica (Spirea), and edged with Caladium argyrites.

On the left of this was another display, set up by Messrs. HUGH LOW & Co., consisting of fruiting Fig-trees and Vines in pots, a batch of varieties of Souvenir de la Malmaison Carnations, and a few miscellaneous greenhouse plants, the whole edged with Maidenhair Ferns.

Messrs. T. S. WARE, Ltd., Feltham, Middlesex, set up a large group of herbaceous flowers, and a charming group of Sweet Peas.

In the non-competitive groups staged by members of the trade, were exhibits of Roses from Messrs. W. SPOONER & SON, Hounslow, Surrey; Messrs. GEO. JACKMAN & SON, Woking, who included some vases of Sweet Peas. Boxes of Roses were good in this collection. Messrs. W. & J. BROWN, Stamford had greenhouse plants in addition to Roses.

Messrs. J. PEED & SON, West Norwood, had a large exhibit of Gloxinias of good size and colours, especially their cut blooms displayed in exhibition boxes.

Begonias were displayed by Messrs. T. S. WARE, LTD., Feltham, Middlesex. This exhibit was of high standard, all being double varieties of the tuberous-rooting section.

Mr. AMOS PERRY, Winchmore Hill, London, N., had an extensive collection of hardy flowers; a similar display being presented by Mr. M. PRICHARD, Christchurch, Hants.

Roses were especially fine, and the number of exhibits numerous, one large marquee being mainly filled with these charming flowers. The Gunnersbury Park Challenge Cup and 1st monetary prize of £6 was won by Messrs. R. HARKNESS & Co., Hitchin, with forty-eight Roses (three blooms of each variety). Among the most creditable blooms, Kaiserin Augusta Victoria and Madame Cochet were in the pink of condition. The flowers in this group had both size and substance. The 2nd prize group of Messrs. B. R. CANT & SONS, Colchester, also contained some well-developed flowers. Messrs. D. PRIOR & SON, Colchester, were 3rd.

A fine display of Orchids came from the well-known gardens of Sir F. WIGAN, Bart., Upper Sheen (gr., Mr. W. H. Young). The 1st prize six exotic Orchids shown by this exhibitor was not challenged; they would have to be especially meritorious to beat those exhibited.

The classes for FRUIT brought some fine produce, the three bunches of Grapes of Madresfield Court, shown by the Hon. Mr. Justice SWINFEN EADY (gr., Mr. Jas. Lock), being of a high standard of quality. This exhibitor was an easy 1st in Class 19 for a collection of fruit in not fewer than six dishes, distinct.

Some good VEGETABLES were also shown. In Class 17 for twelve distinct kinds, Lord ALDENHAM, Elstree (gr., Mr. E. Beckett), was 1st with a collection of high-class produce, including a very fine dish of Edwin Beckett Peas. This exhibit was very nicely set up over a groundwork of Parsley-leaves; the 2nd prize was won by the Right Hon. the Earl of DYSART, Petersham (gr., Mr. F. F. Conway). In this collection Cauliflowers were a feature.

The centre of one of the large marquees was occupied with the classes for table decorations, bouquets, baskets of flowers, &c.

The 1st prize for table decorations was won by the Hon. Mr. Justice SWINFEN EADY, Weybridge.

The 1st prize for a hand bouquet went to Messrs. PERKINS & SONS, Coventry, who are always prominent in this branch of the florist's art.

Mr. L. R. RUSSELL, Richmond, exhibited out-of-doors a large group of ornamental foliage, shrubs, and trees, with well-flowered plants of Crimson Rambler Rose.

Messrs. W. FROMOW & SONS, Chiswick, W., had a large circular group out-of-doors comprised mainly of Japanese Maples.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL FESTIVAL DINNER.

A RECORD!

JUNE 28.—The sixty-fifth annual festival dinner of the supporters of the premier horticultural charity took place in the Whitehall Rooms at the Hotel Métropole on Tuesday evening last. The occasion was remarkable for the fact that the Chairman was Mr. Harry J. Veitch, the popular Chairman of the Executive Committee, and one of the best known and highly esteemed men in the horticultural world. In previous years the chair at this function has been usually occupied by a distinguished nobleman, and it is therefore not surprising that nurserymen, market gardeners, salesmen, and gardeners generally, in addition to Mr. Veitch's personal friends, did their utmost to make the occasion successful, as an expression of their personal esteem for Mr. Veitch, and of their appreciation of the ungrudging labour he has given to the cause of the Institution in which they were all interested. Their efforts were crowned with success, and not only was there a record attendance—there being about forty more present than at any previous festival—but the amount of donations and subscriptions, £3,500, was also a larger sum than has ever been obtained on a similar occasion. Mr. Veitch was supported on his right by Sir Walter Smyth, and amongst these present were Messrs. J. Gurney Fowler, W. A. Bilney, Dr. Maxwell T. Masters, F.R.S., Arthur W. Sutton, Jeremiah Colman, Leonard Sutton, Jas. H. Veitch, George Dickson (Chester), Ed. Sherwood, J. Walker, D. Thomson, George Paul, O. Thomas, H. B. May, P. C. M. Veitch, J. Asshee, Geo. Monro, W. J. Cutbush, J. F. McLeod, Geo. Reynolds, Arnold Moss, M. J. Gleeson, — Hicks, W. Atkinson, P. Kay, J. Walker, W. Roupell, R. P. Glendinning, S. M. Segar, E. Rochford, J. Douglas, J. Melndoe, J. McKerchar, E. T. Cook, N. F. Barnes, William Barr, W. Y. Baker, &c.

After the Royal toasts had been observed with musical honours, the CHAIRMAN proposed that of "Continued Prosperity to the Gardeners' Royal Benevolent Institution." He drew the attention of those present to a little pamphlet that had just been published relating the history of the Institution since its establishment in 1839 until last Christmas. Mr. Veitch proceeded to say that the rules were drawn up originally with such wisdom that, excepting for a few modifications, they were the same now as then. At the first election the Committee were only in a position to elect one pensioner, now they had 207 on the books. The first Duke of Cambridge was the original President of the Institution. Mr. Veitch thought that it might be unhesitatingly claimed that the Institution is continuing to fulfil the objects for which it was founded. And if it was needed in 1839, how much more must it be required in 1904, when horticulture is practised in such a greater degree! It was truly a National Institution, for England, Scotland, Ireland and Wales derived advantage from it, and above all it was a Benevolent Institution—a fact that the Committee were desirous of emphasising—and not a benefit society. Candidates were asked no questions in regard to their religious views, no expensive building was maintained, and therefore all the income above the cost of employing a Secretary and one assistant, and of maintaining an office, printing, postage, &c., was available for pensioners. The pensioners included 121 men and 86 widows, of these five are totally blind, and some others suffer from total paralysis. Two are more than ninety years of age, forty-six are between eighty and ninety years of age, and 111 are between seventy and eighty years of age. As a rule none are awarded pensions under sixty years of age, unless they are from some cause totally incapacitated. These pensioners need an outlay of £3,796 each year. From invested funds they had only £830 yearly, and the annual subscriptions amounted to between £1,500 and £1,600, therefore there was a very large balance to be made good. There was a large reserve fund, but heaven forbid that they should touch it. The Institution had incurred a moral obligation to keep their pensioners in comfort the rest of their lives, and if some untoward circumstances should arise, and it was impossible to collect the amount of money that is collected now, what could be done unless there was a large reserve? Mr. VEITCH, related how in one case a gardener had subscribed a guinea a year for eighteen years, and was afterwards a pensioner for twenty years, whilst his widow is still living and receiving help from the Institution. Letters were read from several pensioners in which gratefulness was expressed in crude

but sincere language for the help received, and as the Chairman said, the comfort of the knowledge to them that the Institution would continue to support them, prolonged their lives. It was much regretted that the Institution is obliged to reject candidates each year. On the last occasion there were thirty-nine unsuccessful candidates; one of these was eighty-two years of age, and had already tried twice. It is probable that next year there will be as many as sixty or seventy applications for fifteen or sixteen vacancies.

The Victorian Era Fund was established in the Jubilee year, and is available for helping candidates awaiting election, while the Samaritan Fund is devoted to the relief of pressing necessity. The rules have been so framed that votes are placed to the credit of subscribers directly they apply for help, thus giving them an advantage, in proportion to the number of years they have subscribed, over those who are non-subscribers. Therefore Mr. VEITCH thought the Committee had a right to expect that gardeners would commence to subscribe whilst young. He said it was very gratifying that the Institution had auxiliaries in Bath, Bristol, Worcester, Liverpool, Reading, Exeter, Wolverhampton, &c., for it had been found that where these existed there became greater interest in the cause of the Institution. He appealed to those present to help the funds to the best of their ability. Were they not all of one large family, and was it not due to God's goodness that they too were not in a position in which they would be obliged to appeal for help from the fund? Mr. VEITCH said he had received subscriptions from Australia, New Zealand, and America; Mr. Sherwood had sent a donation of £500 from Australia. He pleaded eloquently for the gardener and gardener's widow, and said that if those present felt that the times are hard, how much more did they feel it for whom he pleaded? He concluded by quoting Goldsmith's words, "No luxury is so great as the luxury of doing good," and the following words: "Blessed is the man that considereth the poor," "Thou shalt love thy neighbour as thyself."

Mr. GEO. DICKSON (Chester) responded. In the course of his remarks he said gardeners were expected now to avail themselves of science as well as practice, but he was afraid that if they trusted too much to science rather than to practice it would be to the country's disadvantage.

The next toast was that of "Horticulture in all its branches," proposed in a humorous manner by JEREMIAH COLMAN, Esq., and responded to in an equally humorous vein by J. GURNEY FOWLER, Esq.

The toast of "Our Chairman" was in the hands of Mr. ARTHUR W. SUTTON, who commenced by telling the audience a secret, that the morrow would be the anniversary of Mr. Veitch's birthday. Upon this the company cheered again and again, and drank to Mr. Veitch's health with the greatest enthusiasm. Mr. Sutton proceeded to say that Mr. Veitch was born on June 29, 1840, and was educated at Exeter Grammar School. He afterwards went to Altona and France to study the languages, and subsequently studied horticultural science under Dr. Lindley at University College, London. He had easily taken the foremost place in horticulture in our day. The name of Veitch was a household word everywhere, and it was usually prefixed by the word "Harry," for as Mr. Harry Veitch he was familiarly known to gardeners. He took a very prominent part in the International Exhibition of 1866, and attended the first International Horticultural Exhibition held in Russia, and whilst at St. Petersburg had the honour of being received by the Czar of that time. In 1870 he became head of the firm at Chelsea. Mr. Veitch was not merely a practical horticulturist, but he was responsible for the authorship of two very well-known books, *The Manual of Conifers* and *The Manual of Orchidaceous Plants*. He was elected to the Council of the Royal Horticultural Society at the critical time when the Society left South Kensington, and had remained a member until the present time. Mr. Veitch was elected a member of the Committee of the Gardeners' Royal Benevolent Institution in 1868, but in the previous year he had been married, so that in 1868 he and Mrs. Veitch adopted the Institution as their eldest child. He was elected Treasurer in 1896, and Chairman of Committee in 1894. Whilst absorbed in business Mr. Veitch had done a very great deal to help his poor brethren, and for very many years he entirely supported two London missionaries to work in the district of Chelsea.

After the toast had been drunk with musical honours followed by long-continued applause, the Secretary, Mr. G. J. INGRAM, declared the amount of donations and subscriptions to be £3,500. Amongst the donors were the following:—Mr. Harry J. Veitch (Chairman), 100 gs.; Mrs. Veitch, 25 gs.; N. N. Sherwood, £100; J. Veitch & Sons, 100 gs.; Messrs. Rothschild, 100 gs.; Messrs. Sutton & Sons, 100 gs.; A. W. Sutton (Victorian Era Fund), 15 gs.; Mr. Leonard Sutton (Samaritan Fund), 10 gs.; Baron

Schroder, £100; W. L. Cory, 63 gs.; J. G. Fowler, 50 gs.; Mr. Solomon, 50 gs.; Jeremiah Colman, 50 gs.; W. Robinson, £25; R. M. Hogg, £25; W. Crump, 23 gs.; — Hicks, £22 10s.; Hurst & Son, £21; J. Sweet, £21; H. Parr, £20; D. W. Thomson, £20; McKellar, £16 17s.; Thames Bank Iron Co., 18 gs.; H. G. Cove, 13½ gs.; J. Hudson, 12 gs.; Geo. Paul, £13 8s.; H. J. Clayton, £16; John Heal, £12 12s. There was a large number of donors of £10 10s. and of smaller sums, the names of most of whom have been published in the advertisement pages of our issues for the last week and the previous week. Mr. Ingram also announced that there were fifty-two new annual subscribers of 1 guinea, six of 2 gs., and two of 5 gs. The sums contributed by the Covent Garden friends amounted to £407 14s. upon the lists of Mr. E. Richford, and Mr. George Monro.

Mr. VEITCH, in returning thanks, said that he was born of an excellent father and mother. To his father he owed all his business capacity, for he had ever been to him a wonderful example. Mr. Veitch thanked the stewards and all who had helped to obtain the success they had won.

Sir WALTER SMYTHE proposed the health of Mr. G. J. Ingram, the Secretary. This was drunk with enthusiasm; and after Mr. Ingram had responded, the proceedings terminated at a late hour.

SCOTTISH PANSY AND VIOLA.

THE first monthly meeting was held in the Religious Institution Rooms, Buchanan Street, Glasgow, on June 22, for the purpose of awarding Certificates to such new Pansies and Violas as might be deemed worthy. The awards were as follows:—*Fancy Pansies*, First-class Certificate to Mrs. Q. MacFadyean, yellow edged (Dobbie & Co.); Certificates of Merit to Jessie L. Arbuckle, white edged (Kay); Provost Thomson, bronze colour (Kay); Mrs. W. Sinclair, lemon edged (Dobbie & Co.); Mary B. Wallace, yellow edged (Dobbie & Co.). *Show Pansies*, Certificates of Merit to Provost Thomson, dark self (Kay); and James Stirling, primrose self (Dobbie & Co.). *Violas*, Certificates of Merit to Edie, an improved "Butterfly" (Dobbie & Co.); and Griffie Smith, in the way of Dr. MacFarlane (Dobbie & Co.). Next meeting July 13.

Obituary.

ALEXANDER SCLATER.—Gardeners all over the United Kingdom will learn with regret of the death of Alexander Sclater, who acted as manager for thirty-five years of Messrs. Thomas Methven & Son's seed warehouses, Edinburgh. Mr. Sclater died on June 23, and was interred in the Grange Cemetery last Saturday. The funeral was attended by most of the principal nurserymen and seedsmen, and gardeners of the Scottish metropolis and its vicinity.

ANSWERS TO CORRESPONDENTS.

APPLE SHOOT: F. H. From the appearance of the shoot we imagine the branch below to be attacked with canker. There is no fungus present on the specimen sent.

AUCUBA: T. A. Perhaps your plant is a male. This species will not produce berries unless there exist male and female plants in the immediate surroundings.

CACTUS: T. A. We cannot be certain of the species to which you allude, but it is probably a *Rhipsalis* or a *Cereus*.

CALCEOLARIAS: Park House. There is no evidence of the presence of any fungus or insect.

CARNATIONS: J. H. W. Plant quite unhealthy. The leaves show the beginnings of a fungus attack, *Helminthosporium echinulatum*.—*D. H. R.* The leaves were all shrivelled. They appeared to be attacked by eel-worm, but from such indifferent material we cannot form a definite opinion.

CARROTS: J. W. Specimens received shall be examined.

CUCUMBERS: J. S. The condition is easy enough for the botanist to understand. The outer portion of a Cucumber is a part of the stem, and one function of the stem is to bear leaves. The condition is not uncommon, but the reason why we cannot tell. Some extraordinary specimens have been figured in our columns from time to time.

CURIOUS PLANT: J. V. Your plant is the common Rocket, *Hesperis matronalis*, which has become fasciated—a very common circumstance among *Asparagus* and other plants.

CUT FLOWERS: An Apprentice. We have seen a preparation which claims to preserve cut flowers in water, although we have not tested its efficacy to do so. It is named Junofloris, and is obtainable from the horticultural sundriesmen.

CUTTING HOLLY HEDGE: H. These hedges are usually trimmed in the spring (April) or in autumn (September). If you cut them in September they will have a neat appearance until growth takes place six months or more later. If the hedges are of a considerable size it would be almost an endless task to cut them with sécateurs; nor do we think this necessary in cases of small-leaved varieties.

DISA GRANDIFLORA DAMAGED: E. T. The "rust" seen on the flowers and leaves is a common appearance with *Disa grandiflora* when grown in too warm and too moist an atmosphere. Probably the removal from the moist to the dry house which you mention developed the injury. It would be better to place the plants outdoors under a north wall and to keep them wet, sprinkling them overhead night and morning for the remainder of the summer.

FRUIT-HOUSE: H. O. Y. In England the best houses for Vines, and other fruits have span-shaped roofs running from north to south, or lean-to roofs, facing directly to the south. The house you describe should be suitable. Under the sunnier skies of America it may not be so necessary as here that the aspect should be due south.

GRASS FIELD: H. H. As many of the grasses will now be seeding, it will be best to burn the grass before digging the ground, or the seeds would give you much trouble. You would probably require very little manure in the first year, but littery dung from the stables would do no harm.

INSECTS: A. S. The insects are the larval stage of the ladybird, *Coccinella*.

INSECTS INJURING LAURELS: S. H. The caterpillars are those of two species of leaf-roller moths, one being a Tortrix and the other a Tineid. The most effectual remedy would be to collect the rolled-up leaves and injured shoots at once, and burn them. An application of Paris-Green (poison) might check their ravages, but as many of the caterpillars have nearly done feeding, we fear that it is now too late to apply this insecticide.

LABURNUM VULGARE: J. H. P. You may easily obtain plants by sowing seeds.

LAWN IN AMERICA: H. O. Y. The varieties of grasses employed for the making of lawns would not succeed equally well in America. You had better study the lawns in your neighbourhood, and learn what grasses will succeed best. To imitate the English lawn by sowing the same grasses would result in failure. Plantain, Dandelions, and Dock should be spudded out of a lawn, or you may place a drop or two of carbolic acid in the centre of each plant, which will very soon kill them.

LIME TREES: Curious. For various reasons, we should never recommend Limes to be planted in town streets, but we should not believe in any injurious "emanations" in the case you mention. If the perfume from the blossoms should eventually prove objectionable, it would cease in a few days.

MOWER: J. H. P. Address your enquiry to one of the firms who manufacture lawn-mowers, who will be likely to recommend you a machine of the type you require.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*G. W. T.* *Sisyrinchium striatum*.—*A. K.* *Zephyranthes Atamasco*; the Carnation is of a good colour, and fragrant.—*Max Leichtlin.* A species of *Campanula* which seems new to us.—*Betts-hanger Park.* We do not recognise the fruit.—*W. W.* 1, *Rosa macrophylla*; 2, *R. blanda*.—*Comrie.* *Festuca loliacea*.—*R. N. H.* *Cattleya Mendeli*.—*Vitis.* 1, *Masdevallia triaristella*; 2, *Masdevallia simulia*; 3, *Masdevallia polysticta*; 4, *Pleurothallis macrolepharis*; 5, *Stelis ophioglossoides*; 6, *Physosiphon Loddigesii*.—*R. G.* 1, *Dendrobium aduncum*; 2, *Bulbophyllum affine*; 3, *Eria obesa*.—*F. A.* *Helix Soleirolii*, a close-growing Corsican

plant, which is grown in gardens for decorative purposes like moss.—*A. R. U.* *Acampe multiflora*.—*J. H.* 1 and 3, varieties of *Cypripedium Curtisii*; 2, *Cypripedium ciliolare*.—*A. J.* 1, *Agrostemma coronaria*; 2, *Corydalis lutea*; 3, *Tradescantia virginica*, white var.; 4, *Tropeolum polyphyllum*; 5, *Spiraea filipendula*, double; 6, *Dielytra eximia*.—*G. B.* *Anchusa* sp.—*Fliz.* 1, *Spiraea aorbifolia*; 2, *Deutzia scabra*; 3, *Spiraea opulifolia*; 4, *Philadelphus coronarius*; 5 and 6, *P. grandiflorus*.—*W. K.* 1, *Polemonium caeruleum* var. *alba*; 2, *Pyrola rotundifolia*; 3, *Sedum rupestre*; 4, *Kalmia angustifolia*; 5, probably *Rhododendron dauricum*; 6, *Styrax* sp.; 7, *Valeriana Phu aurea*; 8, *Smilacina bifolia*; 9, *Lysimachia vulgaris*; 10, *Phillyrea*; 11, Probably a *Vaccinium*. You send more than the number, and most of them not in bloom.—*H. W.* *Dendrobium Pierardi*.—*H. G. R. B.* 1, *Phyllocactus crenatus*; 2, *Crassula coccinea*.—*A. L. B.* Flower decayed, probably *Lilium Kramerii*.—*J. T.* *Inula glandulosa*.—*E. L.* *Odontoglossum Harryanum*.—*C. E.* 1, *Veronica spicata*; 2, *Escallonia macrantha*; 3, *Spiraea arifolia*.—*A. W. B.* Proliferous Roses, extremely common, but the cause is not satisfactorily known.—*W. C.* *Habenaria bifolia*.—*Scottie.* 1, *Begonia weltoniensis*; 2, *B. fuchsoides*; 3, *Ophiopogon spicatum*; 4, *Lygodium scandens*; 5, *Adiantum formosum*; 6, Perhaps *Eucomis*.—*W. M.* 1, *Juniperus sinensis*; 2, *Juniperus sinensis* Golden variety; 3, *Cupressus (Retinospora) obtusa*; 4, *Cinnamomum zeylanicum*; 5 and 6, not recognised, send in flower.—*J. T.* 1, *Odontoglossum luteo-purpureum*; 2, *Lælia tenebrosa*.—*J. R. G.* 1, *Clematis*, perhaps *montana*; 2, *Acer eicarpum*; 3, *Pyrus Aria*; 4, *Robinia pseudoacacia variegata*; 5, *Lilium pomponium*. Specimens all withered and badly packed.—*J. H. H. J.* 1, *Thuya dolabrata*; 2, *Retinospora filifera*; 3, *Viburnum*—we do not recognise the species; 4, *Saxifraga crassifolia*.—*Zero.* 1, *Campanula glomerata*; 2, *Ajuga reptans*; 3, *Phalaris arundinacea*, Gardeners' garters.—*Jang.* 1, Spanish Iris; 2, a composite near *Coreopsis* (?), specimen insufficient.

PEACHES: F. G. Fungus attack (see next week). Cut away the affected branches and burn them.

PHLOX: G. S. We do not know the cause of your plants going wrong in the way they do. The base is diseased and the leaves are abortive.

PLUM-TREE: H. H. The scale should have been treated earlier. As the Plums will soon be ripening, you cannot use strong insecticides until the autumn.

ROSE AND FRUIT-TREES: W. B. B. The fungus on Rose-leaves is *Actinonema rosæ*. Spray with potassium sulphide, $\frac{1}{2}$ oz. to 1 gallon of rain-water. This is most effective when used early in the season as a preventive, before the fungus gains a foothold. *Fusicladium dendriticum* is attacking the Apple-leaves. Spraying with dilute Bordeaux-mixture in the spring is the most certain remedy.

STRAWBERRIES: J. H. We cannot determine the reason why your fruits do not ripen. The spots on the leaf are due to the presence of a fungus, which is very common, and does not as a rule hurt either plants or fruit materially.—*A. E. E.* From the appearance and flavour of the gathered fruits we judge them to be of the variety Royal Sovereign. The labels may have been misplaced. Send fruits to a trade grower of Strawberries. Dress the plants with flowers-of-sulphur after the crop has been gathered.

TOMATOS: Reader. Your signature is not at all appropriate. Every week almost we mention this disease, and have figured it repeatedly. Burn your plants. See the Calendar of Garden Operations published at this office at 6d.

COMMUNICATIONS RECEIVED.—*W. P. R.*—The Electrician.—*Land.*—*Pennick & Co.* (photos).—*Dr. Bonavia* (photos).—*W. T. D.*—*Little & Ballantyne*.—*A. W. S.*—*J. H. V.*—*S. A. S.*—*B. W.* (no room; address the Committee).—*J. W. MeH.*—*Prof. Marchi.* *Mantua*.—*E. M. H.*—*W. H. C.* (many thanks).—*H. H.*—*Curator R. G.*, *Kew*.—*R. L. C.*—*Gen. Lucie-Smith*.—*Dr. Rendle*.—*C. G. van T.*, *Haarlem*.—*T. P.*—*W. H.*—*S. T. W.*—*W. W.*—*A. W.*—*L. S.*—*P. G.*—*G. S.*—*F. G.*.—*J. W. H.*—*F. W. T.*—*Messrs. Perry*.—*Dilwyn*.—*S. H.*.—*J. C. K.*—*D.*, *Darlington*.—*D. & Co.*, *Rotheray*.—*Director, Royal Gardens*.—*Kew*.—*C. J. E.*.—*R. G. T.*.—*H. S.*.—*Sec.*, *Nat. Rose Soc.*.—*A. A.*, *Ringwood*.—*W. F. O.*.—*E. A.*.—*E. H. J.*.—*W. A. C.*

(For Markets and Weather, see pp. x. and xii.)



VIEW OF THE GARDENS AT MINLEY MANOR, HAMPSHIRE,
THE RESIDENCE OF LAWRENCE CURRIE, ESQ.

From a Photograph by F. Mason Good.



THE
Gardeners' Chronicle

No. 915.—SATURDAY, July 9, 1904.

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ADAPTATION TO CIRCUMSTANCES.*

ECOLOGY has come to stay. Botanists, in America and France especially, have for some considerable time been studying the effects of the "direct action of the external conditions of life" upon plants, to use Darwin's expression; and the conclusions, both from observations in Nature and of experiments, are that the forms and structure of plants, upon which the distinction of species is based, are the direct outcome of external agencies to which the plant responds, and so builds up the tissues required, which are in every case most beneficial under the circumstances in which it finds itself.

Linnaeus, 150 years ago, recognised that the *facies* of plants growing together under any marked conditions was more or less uniform. Numerous geographical botanists, such as Grisebach, have described many such floras; but it is only of late years that the subject of ecology has been treated on a physiological basis, as Dr. Schimper says in his masterly work, and thorough investigations have been made into the anatomy of plants, illustrating their correlations with the soil and climate.

* "The Influence of Dry and Moist Air upon the Form and the Structure of Plants," by M. Ph. Eberhard (*Ann. des Sci. Nat.*, t. xviii, p. 61, 1903)

When Darwin taught us to believe in Evolution, the process by means of which such "adaptations" as are revealed between the plant and its environment, were fixed, was thought to be natural selection. Taking for granted that such was the case, any encouragement to test or prove if it were so or not was chilled, being presumably unnecessary. French botanists, however, who did not take kindly to the idea of natural selection, pursued the even tenour of their way; and so we have the results of their researches and experiments conducted without any preconceptions.

M. Constantin is a notable instance in France, and M. Warming, of Copenhagen, is another, both of whom have shown that the forms and structure of plants are strictly correlated to their environments; and that inductive evidence was ample to justify the belief that they are the results of direct causes and effects. In other words, they proved to be the result of what Darwin called the "direct action" of the environment, which, as he said, is quite capable of giving rise to new varieties "without the aid of natural selection," the alternative to his supposed "indefinite" action.

Though a very large amount of inductive evidence is easily procurable, ample to substantiate this view, there is now a considerable accumulation of experimental proof, and the important paper herein referred to is a case in point.

As the two extreme causes or influences upon plants are excessive drought and a moist soil and atmosphere, M. Eberhardt has done well to confine his experiments to investigate the effects of an intensely dry air and a saturated one.

After describing his materials and method of procedure, he gives the effects on numerous plants grown in a dry, a moist, and a normal atmosphere respectively, both as to the internal anatomical details and the external morphological structure of organs. There is a perfect uniformity throughout in the effects which he describes in detail upon each species used, and he concludes with a general summary.

To take a few cases. First, with regard to the epidermis of the leaf of a *Lupin* (illustrated). In dry air the cells are very small, with nearly straight walls, accompanied by many stomata; whereas in moist air the cells are very large, with wavy margins, and there are few stomata. In fact, the proportions are 15 for dry, 5 for moist, and 7 for normal air, on the same area.

The influence of drought upon shoots is to increase the number of internodes; while a moist air diminishes them; but whereas they are shortened in the former, they are elongated in the latter. The uniformly dwarf habit of high alpine plants is thus explained. As dry air greatly reduces the size of the leaf, we thus have a natural interpretation of such shoots and leaves as are characteristic of Cupressinæ, alpine Veronicas, Lycopodiaceæ, &c.

Taking the stem of *Populus nigra* (illustrated), very marked differences appear. In dry air the cortex is diminished, sclerenchyma and wood are greatly increased, and the pith reduced. On the contrary, in moist air the former are as greatly reduced and enfeebled, with a very large pith.

In the stem of a *Cotoneaster* still greater differences prevailed. In dry air the pith

had almost vanished, the wood and sclerenchyma being very greatly augmented; whereas in a moist air the wood does not even form a zone, but remains as isolated fibrovascular bundles, with large interspaces for medullary rays.

Another feature is the vastly increased amount of collenchyma in such stems as usually possess this tissue, e.g., *Aster sinensis*. Quite analogous differences occur in petioles.

In a vertical section of a leaf in dry air there is seen to be a thickened cuticle, an increase in the number of rows or layers of palisade cells, even to the exclusion of the usual lax lacunous mesophyll.

The following is an abridgment of the writer's conclusions on the effects of drought:—

1. *External morphology*.—Dwarfing, with increased rigidity of the stem; diminished length, but increase in the number of internodes. Reduction of the size of leaves and stipules, with an increase of the thickness and depth of colour; an increase of hairiness and an earlier leaf-fall.

2. *Internal Anatomy*. — Epidermal cells smaller in size, with straight walls. Reduction of cortex and pith. Increase of secretory canals and their secretions, as well as raphids. Increase of sclerenchyma, collenchyma, and wood; the generative layers being very active. A hastening of the development of bark. An increase in the number of vessels in the wood, with a thickening of their walls. The effect on the leaves as mentioned above. Under a moist air precisely the converse takes place.

M. Eberhardt has thus proved conclusively by his excellent experiments the conclusions previously arrived at by inductive evidence for the effects of drought and moisture herein described are precisely the same as those to be seen in plants, as of the desert on the one hand, and subaquatic conditions of life on the other. In my work on *The Origin of Plant Structures* (1895), I referred to all these details as being due to the direct action of the conditions of life, coupled with the responsive power of protoplasm within the plant. Critics of my book demanded experimental proof; M. Eberhardt has now supplied it. *George Henslow.*

ORCHID NOTES AND GLEANINGS.

EPIDENDRUM COCHLEATUM.

"IN an examination of specimens of *Epiden-
drum* from many parts of South Florida, not a
single one has been seen with a 'normal' column,
so that it may be safely assumed that *Epiden-
drum cochleatum* has given rise to a three-
anthered race exclusively occupying this part of
the State at least. The pollen of the lateral
anthers — which are applied to the stigma —
germinates *in situ*, as proven by microscopic
examination; while the pollen of the third or
normal anther does not reach the stigmatic
surface. Plants growing in my greenhouse, and
thus removed from the possibilities of insect
fertilisation, have produced seeds freely. It is,
therefore, safe to conclude that the variety is
self-fertilised. When an anomaly is sporadic,
and found only in a few individuals, it is
merely of teratological interest; but when the
'anomaly' becomes constant in plants occurring
over a large area, it seems worthy of recognition
as a varietal character." Oakes Ames, "*Contribu-
tions from the Ames Botanical Laboratory*, No. 1,
Cambridge, Mass."

COLONIAL CORRESPONDENCE.

THE INDIAN TULASI.

WITH reference to the paragraph in the *Gardeners' Chronicle* for January 16, 1904, p. 48, I beg leave to state that the Indian Tulasi or Tulsi plant, which is worshipped by Hindus, belongs to the genus *Ocimum*, natural order Labiatae, and is not *Michelia champaca*. *Michelia champaca*, Linn., is a tree, whereas the species of *Ocimum* are shrubby plants; moreover, so far as I know, the *Michelia champaca* tree is never wor-

The outdoor cultivation of the Vine has increased extensively round those portions of the fruit-belt of Ontario which border on the Lakes; and experience has taught that a good, heavy clay loam suits the Grape-vine admirably. Heavy dressings of manure are not encouraged, but cow-manure is most beneficial to the canes when exhausted.

Three-year-old Vines are generally planted here, and the canes are allowed to go unpruned during the first spring. In the autumn they are cut back to the ground, leaving an inch or two of wood beyond and three or four buds in all. In

this way, with occasional careful inspections, good fruit of some varieties may be stored with success until the following spring. C. H. K. Baillie, Winona, Ontario, Canada.

HOW I MADE AN ORCHID-BASKET.

One of my sons was manager at the terminus of the line that brought the sugar from The Homebush Mill; the terminus was, of course, in original forest, and near his house, in the base of an *Acrostichum*, grew a plant of *Cymbidium madidum* [*albuciflorum*]. His saddle-horses had access to the tree on which it was growing, and



FIG. 6.—ROSE ULRICH BRUNNER: ABOUT HALF SIZE. (SEE P. 24.)

shipped by the Hindus, while *Ocimum sanctum* and *O. villosum* are. K. Baneyu, *Ledgering Clerk, Office of the Director, Land Records and Agriculture, Punjab, Lahore, India.*

NOTES ON OUTDOOR GRAPE-VINE CULTIVATION IN CANADA.

Although the weather last winter was so unusually severe in the Ontario (Canada) fruit-growing districts, the outdoor Grape-vines appear to have suffered very little. There are many varieties of the Grape grown by Canadians which are hardy enough to withstand cold 20° or more below zero; but the plan of layering-in the cane before the winter sets in seems to be largely adopted by some growers.

the following spring the buds are reduced to two, and in the autumn the growth is cut back to 4 feet or so, and fastened on to the long lines of trellis which are such familiar objects in the vineyard districts.

The following varieties withstand the cold climate, and have proved themselves to be best adapted to outdoor cultivation:—Moore's Early, Concord, Early Lindley, Campbell, Warden, Vergenne's Niagara, Moore's Diamond, and a few others of somewhat irregular productiveness. Good bearing canes of these varieties will, as a rule, yield from 16 to 20 lb. of fruit each. The fruit is gathered when dry, and placed in a cool-room for a week or ten days, when it is packed in shallow boxes without the use of paper; and in

one of these animals took to eating the *Cymbidium*. He did not like to see it destroyed, so he sent it to me. I had to make a basket for the plant, and did it in this way. I cut off from an "Iron-bark" log three 5-foot lengths, and let them into the ground 18 inches deep, forming a triangle 3 feet 6 inches across at the top. I bored an auger-hole in each log near the top. I next cut off several 3 feet 6 inch lengths from a Cedar log, splitting off from these as many pieces as were necessary to fill in between the three let into the ground, tapering them at their lower ends to form a V; and as they were split from the outside the interior of the whole was rounded. A hole was made in the top of each to correspond with the three let into the ground. As many

of these pieces were filled in between the three as to form a round, good-shaped flower-pot 3 feet 6 inches at top, the same height from the ground, wire through all the holes held the top together, and I filled the basket nearly to the top with chopped-up *Acrostichum* base, the only material we have to grow Orchids in, having no peat and no sphagnum-moss. The *Cymbidium* was placed on the top and filled the basket comfortably. The plant grew well, and the second year had twenty-three flower-stems nearly 2 feet long. It was close to the rustic porch, constructed of red Mangrove, and covered with a grand plant of *Beaumontia*

HABITATS OF DIPODIUM.

In the *Botanical Magazine*, plate 7951, appears an excellent figure of *Dipodium pictum*, Rehb., 61.; and in the description of it Mr. Hemsley says that the records are not very precise, but, from the incomplete notes of collectors, it appears that *Dipodium pictum* and *D. paludosum* start in the ground and grow up trees. This is certainly true of *D. pictum*, a very common plant in the Malay peninsula. It inhabits woods, which may be called open woods for this part of the world, where the woods are usually very dense, and is usually to be found in the wetter parts of them. It is

vain. I think its locality there must have been turned into a Rice-field, and so it has been destroyed. It appears to be very rare in the peninsula now, though abundant in Labuan and elsewhere further east. H. N. Ridley, *Botanic Gardens, Singapore*.

PUBLIC PARKS.

I SHOULD esteem it a favour if you would inform me whether there are any public parks or gardens in England and the Colonies, other than those in this Colony, which are also more or less nurseries? As you are aware we have in this

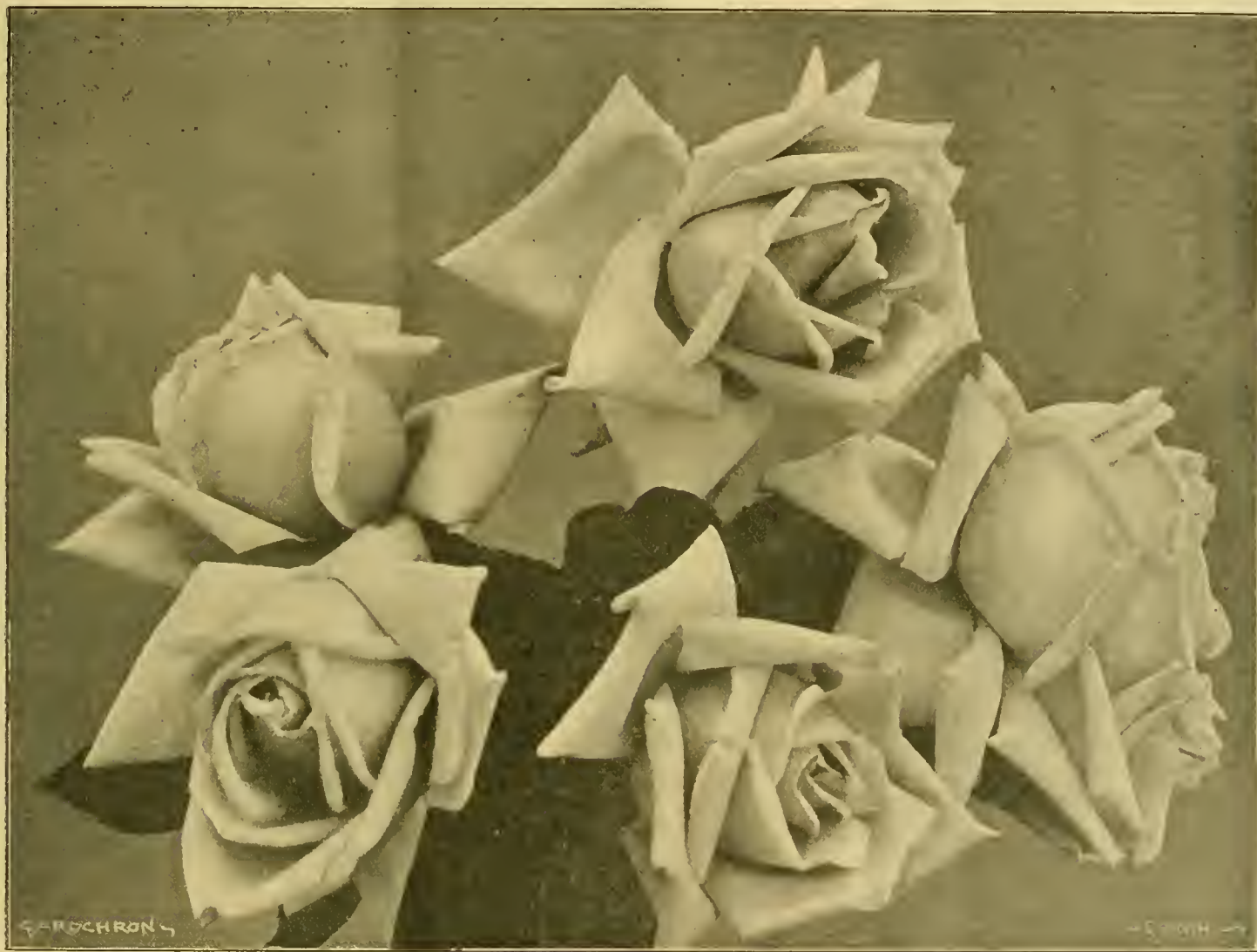


FIG. 7.—ROSE LA FRANCE: ABOUT HALF SIZE. (SEE P. 24.)

grandiflora. The porch is over the steps that lead on to the front verandah, and although not a gaudy Orchid, the *Cymbidium* was ornamental and deeply interesting. After some time, however, we wished the plant farther away; we began to experience a disagreeable smell, and in a short time it became dreadful. Our noses soon led us to the basket, and between the uprights I could see the body of a large black snake. How the brute came to die there I do not know; and as it was near the bottom it could not be got out without destroying the whole thing. Of all smells there is nothing to compare with that of a decomposing black snake; but, like many other disagreeable experiences, it came to an end, thanks to the ants and the hot weather. D. Buchanan, Mackay, Queensland.

found sometimes straggling on the ground, and eventually climbing up, usually, quite small trees, which it encircles with its roots. It does attain the height of 5 or 6 feet occasionally, but more usually is 2 or 3 feet high. It is certainly not very floriferous in its wild state. I have only once or twice seen it in flower wild, but it blooms easily and often in cultivation, either on stocks, in pots, or on trees in the garden. It is not often panicked, as it is figured, usually being simply racemose.

D. paludosum, Rehb., on the other hand, does not climb at all so far as I am aware. It inhabits open, hot swamps, and is, I believe, always terrestrial. I have never met with it myself, for though Griffith was the first to find it, at Ayer Panas, in Malacca, I have sought there for it in

country a number of "botanic gardens" so-called, but not one of them fulfils one of the first principles of a botanic garden; all engage more or less in trade. They do not hide the fact, as, for example, the oldest public garden in the Eastern Province is known as Grahamstown Botanic Gardens and Eastern Province Nursery. Even public parks supported by Government grants and from municipal revenue make a practice of selling pot-plants, cut flowers, &c. This has been the case at the park from which I write, and although we have two nursery firms in the town, besides an intelligent coloured florist, an attempt is to be made to enlarge our nursery business and, if possible, make the park self-supporting! I have pointed out the futility of such an attempt, but to no purpose. The average

colonial is much at sea with reference to public parks and botanic gardens. He calls the former a botanic garden, and the latter a park, and in nine cases out of ten would, if he were asked to define a botanic garden, describe it as "a garden where they sell trees, plants, and flowers." Unless I am greatly in error I believe such a state of affairs exists in no other part of the British Empire; but I wish to be quite certain, hence my enquiry. *H. F., Cape Colony.*

[We have often had protests about this state of things, which is, we believe, not peculiar to South Africa.]

EMIGRATION TO SOUTH AFRICA.

I should be pleased if you could spare a short space for the benefit of young men thinking of coming to S. Africa. There are frequently advertisements in the Gardening papers for young men to come to this colony on starvation wages. Thirtyshillings and £2 a week look well on paper, but as the cost of living here is more than double that at home, and clothes are very dear, one requires much more than one's wages to be able to get on. Fourteen shillings a week at home would go further than £2 in Africa. Young men should by no means sign any agreement to work for less than £3 per week. There have been many young fellows come out here in consequence of advertisements, but they have abandoned gardening, and now I often see them engaged in other work. *One who has been bitten.*

NURSERY NOTES.

COMBE WOOD.

A VISIT to Combe Wood, near Kingston, Surrey, is always a source of delight to the plant-lover. Its undulating surface is brilliant now with Golden Yews of surpassing splendour; at another time Rhododendrons and Azaleas or Roses form the dominant attractions. Woods now in the full beauty of their leafage form the boundaries, and here and there are peeps over Wimbledon Common, and in the blue distance the chalk hills of Surrey. These are features which everyone can admire and appreciate; but in addition to this the plant-lover is pleased with the order and "keeping" of the nursery, and above all things delighted with the wonderful collection of rare and interesting plants it contains. A long day might be spent in the investigation of these treasures, and the visit would have to be repeated at frequent intervals during the season. For here are collected and displayed the many interesting and beautiful things introduced by the Veitchian firm from China and Japan, from the Himalayas and we know not where besides—plants collected by the late John Gould Veitch, by Maries, by James Veitch, by Sargent, and in these later times by Wilson. Many of the introductions of the last-named collector are not yet named, they are grown under number, and we must possess our souls in patience till they are in a condition to be distributed and spoken of. Of their numbers and diversity, those who saw the wonderful collection of dried specimens exhibited last year before the Royal Horticultural Society may form some notion. An idea of their quality may also be gained by recalling a few hardy plants that have already been distributed, such as *Astilbe Davidii*, *Davidia involucrata*, *Jasminum primulinum*, *Senecio tanguticus*, *S. clivorum*, *Actinidia chinensis*, and various Vines. But these are but a fraction of what is to come.

On the slope of a slight declivity the visitor might fancy himself in a forest of Japan or Central China. Here the trees and shrubs have grown into specimens. In full bloom at the time of our visit were *Cornus Kousa*, *Carpenteria californica*, *Fremontia californica*, *Magnolia Watsoni*, the perfume of whose beautiful flowers is

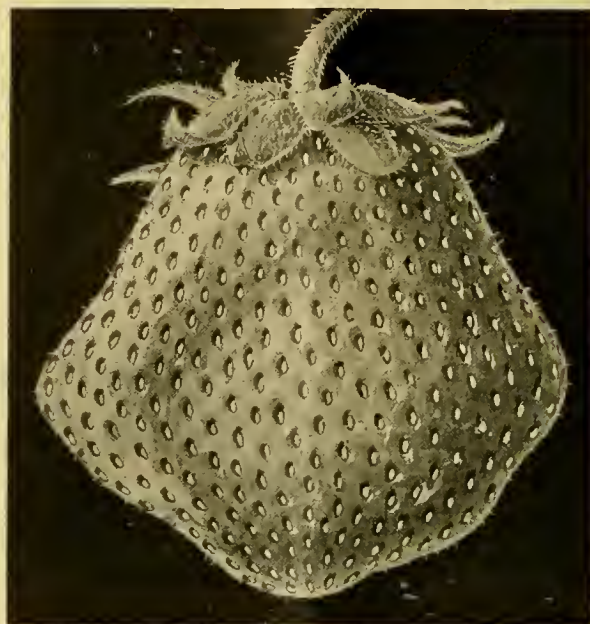


FIG. 8.—NEW STRAWBERRY LAXTONS' REWARD.

Obtained an Award of Merit at the last meeting of the Royal Horticultural Society. (See p. 21.)

almost too strong to be agreeable; *Meliosma myriantha*, well named; *Viburnum tomentosum*, *Buddleia albiflora*, *Hydrangea Thunbergii*, with deep-blue flowers. Besides these there are Maples galore, Poplars, Cornels, Pavia, Marleas, Brambles of strange appearance, *Clerodendron trichotomum*, *Styraxes*, Hornbeams, and Vines. The generic names are, indeed, familiar, and we should not make mention of them but to emphasise the fact that the species are not of the common herd, but rarities and novelties of the first order; many the profane eye has not yet seen, and would not recognise if it had. We must wait till the time comes. Let the reader

take our word for it that when it does come the reputation of Messrs. Veitch for the introduction of novelties will, if that be possible, be enhanced.

We have mentioned *Cornus Kousa* with its sheets of snow-white flowers, but we have not previously seen the variety in which the broad bracts, snow-white on the under surface as usual, are of a rich rosy-pink on the upper, thus affording in colour a resemblance to a gigantic *Hydrangea*. Hardy shrub-lovers please note. They are not likely to come across a more beautiful object than this.

But this wonderful Japanese hill-side is not the only place where these treasures are displayed.



FIG. 9.—STRAWBERRY ROYAL SOVEREIGN.

The most popular Strawberry at the present time. (See p. 21.)

(Much reduced.)

Many find a place among better-known specimens alongside a long walk which borders the nursery, and in the slip adjoining are hundreds of Wilson's introductions, growing on till they show themselves in their true character. Many of the Vines are already proving themselves to be exceedingly ornamental. On the Eucryphas, the Stuartias, the Escallonias, and the hosts of older introductions, there is no space here to dilate, but we cannot resist saying something about the Conifers, for which this nursery

Among the pillar Roses particularly striking were Una, with large white single flowers; Paul Transon, like Alberic Barbier a derivative from Wichuriana; Lucy, with very large single shell-pink flowers; Wallflower, and Cecilia, the latter a cross between a Sweet-Brier and a Moss. But we must stay our hand, the richness and interest of the plants are enough to deter a hurried note-taker, and when the note-taking had to be done in a pelting shower under an umbrella, the process was not facilitated.



FIG. 10.—STRAWBERRY TRAFALGAR.

A large, rather pale-coloured, but good-flavoured fruit. (See p. 22.)

has always been famous. The plants of *Sciadopitys* are something specially remarkable, densely pyramidal, well furnished masses of foliage, very striking in the young state, and some bearing cones. Some of these have been lifted and grown in tubs, so that we shall not be surprised to see them at some of our exhibitions in the near future. The Golden Yews, as has already been mentioned, were startling in their brilliancy as we saw them in the sunshine following a shower. Other noteworthy coloured Conifers are the silver-leaved variety of *Cedrus atlantica*, and the yellow-leaved form of the same species, which is interesting, but not so remarkable as to colour as the Yew, or the golden variety of the Lawson Cypress.

BEDFORD STRAWBERRIES.

THE work of criticising varieties of Strawberries always requires the exercise of considerable discrimination, and when it has to be done in the midst of such an extensive collection of seedling varieties as Messrs. Laxton Brothers possess at Bedford, the conclusions arrived at by individuals are apt to vary very much. So it was on July 1, when experts from London and elsewhere visited these nurseries, and made an examination of the new varieties that Messrs. Laxton have succeeded in raising by the cross-fertilisation on an intelligent basis of well-known sorts and unnamed seedlings. A Strawberry may be judged from several standpoints. The question was

asked, "What is the first quality that should be sought in a variety of Strawberry?" Some one answered, "Vigour of constitution;" another "Free-cropping quality," others "Flavour in the fruits," "Solidity or firmness of flesh of fruit," whilst one person remarked that flavour mattered little, because this quality could be supplied by the use of sugar and cream! From such a view the writer entirely dissociates himself, for whilst the cultivator may require vigour of constitution as a necessary quality in his plants, and the market grower insist upon cultivating only heavy cropping varieties, the consumer, whose opinions are seldom given consideration, has a right to expect that Strawberries should possess a certain amount of flavour and sweetness in themselves. Before going to view the plants in the beds, the party tasted fruits of The Laxton, a variety obtained from a cross between Royal Sovereign and Sir Joseph Paxton. This variety gained a First-class Certificate from the Royal Horticultural Society in June, 1901, and has since been distributed to the public. The fruits are quite as early as those of Royal Sovereign; they are large in size, rich in colour, of good flavour, and firmer in the flesh than is Royal Sovereign. It crops freely and grows vigorously.

The first variety we examined upon reaching the beds of growing plants was Bedford Champion, a new seedling obtained from crossing a seedling from Noble and Sir Joseph Paxton, with another seedling from Scarlet Queen and John Ruskin. The plants grow in the manner of Noble, and are very vigorous. The fruits are of very large size, almost round in shape, very smooth to the palate [as the seeds are nearly buried in the flesh], and possess moderate flavour. The trusses are enormous, and being such a heavy cropper the variety may become useful to market growers. It is an excellent fruit for consumption in hot, thirsty weather.

The variety that gained an Award of Merit at the last meeting of the Royal Horticultural Society is shown in fig. 8. It was obtained from a cross between Royal Sovereign and British Queen, and has been named Laxton's Reward. This variety, which will not be distributed until next season, appears to be a good grower; it crops abundantly, and the fruits, ripening in mid-season, attain to large size, and in shape are generally like a cockscomb, but occasionally more like a cone, many of the fruits being of the irregular form shown in the illustration. The flavour is better than that of Bedford Champion; the flesh is firm and of rich colour.

Messrs. Laxton have much difficulty in matters of nomenclature, and as varieties continue to supersede varieties, the names become more or less confusing. Here is such a case. The firm have already upon the market a good late fruiting Strawberry known as Latest-of-All, but we were shown on July 1 a later acquisition, obtained from crossing Latest-of-All with a very late-fruited unnamed seedling. The variety obtained from this cross appears to be at the very least one week later in ripening than Latest-of-All, and so it has been named "Laxton's Latest"! It is therefore in name and in deed "The Latest," but not "Latest-of-All." The fruits were still green, whilst those of Latest-of-All were commencing to ripen, and those of Givon's Late Prolific, another excellent variety (raised by the gardener at Givon's Park), were commencing to show colour. Another new variety, "The Bedford," is from a cross between the varieties Sir Charles Napier and Latest-of-All. The fruits are firm in flesh, rather short, but tapering to a point, in colour similar to those of Sir Charles Napier, and possessing good flavour.

We have mentioned some of the most important of the new varieties that have been named with a view to distribution. But in addition to these there

are scores of varieties fruiting at Bedford that possess no names, and it is not necessary therefore to allude to in detail here. They are all results of intentional crosses, and the parentage in each case is known and recorded. We were invited to taste any of these, and thus help Messrs. Laxton in determining which are best. The work of raising such a number of seedling varieties every year and keeping them separate from each other until they fruit, and eventually in determining which varieties shall be destroyed and which retained, is exceedingly onerous, demanding not only much time, but great care, experience, and skill. This work has been pursued at Bedford ever since the late Mr. Laxton distributed the variety known as Traveller thirty years or so ago. The greatest success that has been obtained hitherto was the raising of Royal Sovereign (figured in *Gardeners' Chronicle*, July, 1896, and reproduced now at fig. 9), for while it may be safely asserted that there are extremely few gardens in the British Isles in which Royal Sovereign is not cultivated, it is equally true that in some gardens its popularity for forcing in pots and for fruiting out-of-doors in beds is so great that the variety has ousted almost all others from cultivation. It was raised from a cross between Noble and King of the Earlies. In the unnamed seedlings referred to above, the variety Latest-of-All appeared to have been used very frequently as a parent, and it may be placed on record that a seedling from Waterloo and Captain, and another from the varieties James Veitch and Vicomtesse Héricart de Thury, satisfied the writer's opinion of what good Strawberries should be. But tastes differ, and at the present day some appear to prefer a slightly acid fruit, for when sweet fruits of exquisite flavour were tasted we heard such exclamations as "Insidious," "Not sufficiently refreshing," &c., and when a more acid variety was under examination such remarks as "Nice brisk flavour," "Very refreshing," &c.

The collection at Bedford includes almost all the known varieties of repute, including the good-flavoured, pale-coloured Trafalgar (see fig. 10), Vicomtesse Héricart de Thury (figured in *Gardeners' Chronicle*, June 22, 1895), Black Prince (excellent for preserving), British Queen, Pilibasket (a prodigious cropper), Sensation, Leader, Mentmore, Dr. Hogg, A. F. Barron, Louis Gauthier, President, Keen's Seedling, John Ruskin, La Grosse Sucrée, Monarch, &c.

The firm is also making crosses between varieties of the "perpetual" fruiting section, with a view of obtaining improvement; and the cross-breeding of Black Currants and other kinds of fruit is engaged in. The latest acquisition is a tiny seedling plant from a cross between the Plum and Apricot. A similar cross has, we believe, been already obtained by the "Horticultural Wizard," Mr. Luther Burbank, U.S.A.

KEW NOTES.

GOMPHIA DECORA, Lem.—Flowering in the Victoria-house is a specimen of this handsome stove shrub; it is now very little in cultivation, though introduced many years ago by Messrs. Henderson. It belongs to the Natural Order Ochnaceæ, a not very extensive order of trees and shrubs, growing chiefly in tropical America, where this species is said to make a shrub varying in height from 10 to 15 feet. The bright yellow flowers are produced in a crowded panicle, some 6 inches in length, terminating the branches; the individual flowers have a diameter of nearly 1 inch. The inflorescence lasts in good condition for quite a month. The cultural conditions required are much the same as those given to *Ixoras*, except that for *Gomphia* the soil should consist chiefly of good fibrous loam. It is figured in the *Botanical Magazine*, t. 5262, under the name of *G. olivæformis*.

SENECIO MACROPHYLLUS, Bieb.

This fine hardy herbaceous perennial is now making a bold display in a bay outside the Lily-house. It is a handsome species for planting in large masses for effect, as is shown by the bed of about fifty plants now in flower. The leaves are glaucous and very large, being 2 to 3 feet long and 9 inches to a foot broad. The flower-stems of the plants at Kew are from 3 to 4½ feet high, having dense pyramidal heads of bright yellow flowers, the inflorescence being about 1 foot long, each composite flower having a diameter of 1 inch. There are three to five ligulate flowers, and usually eight disc flowers. The inflorescence opens from the top downwards. This species should be grown in a rich loamy soil, the ground being dug deeply previous to planting, thus affording the strong roots every chance of developing, which is absolutely necessary for the production of strong crowns. Propagation is effected by means of seeds or root-cuttings. When once a stock is obtained, the best method is to divide the large clumps into small pieces containing about three crowns. This operation should be carried out just when the first signs of growth appear, which is usually at the end of March or early in April. This *Senecio* prefers a somewhat shady position, and requires abundance of water when in full growth. It was introduced from the Caucasus in 1896.

LISTROSTACHYS FORCIPATA, Kränzlin.

This is a very pretty and curious species, now flowering in the warm Orchid-house. It was sent to Kew in August, 1901, from Buea, in the Cameroons, W. Africa, and flowered the following year. The plant presents the appearance of a small rigid-leaved Iris, having leaves from 3 to 6 inches long and about $\frac{3}{4}$ of an inch broad, usually having six leaves on each plant. Several specimens are contained in a 6-inch teak basket, and they have produced nine racemes, each about 2½ inches long, and bearing individually from twelve to eighteen flowers. The flowers are white and semipellucid; the sepals and petals are curved towards the column, giving the flower a semi-globose shape; the spur is nearly an inch long. This is a charming little stove Orchid, easy to grow, and very free in flowering. It succeeds well in a basket in a mixture of peat and moss. *W. H.*

NOTICES OF BOOKS.

THE COUNTRY GENTLEMEN'S ESTATE BOOK.

This is a most useful compilation, edited for the Country Gentlemen's Association, 2, Waterloo Place, Pall Mall, by Mr. W. Broomhall. It is a veritable encyclopædia on matters connected with estate management, estate work, and forestry, whilst gardening receives a smaller share of attention, so small, in fact, that it might have been omitted without detriment to the book. The chapter on estate law is very useful for reference; indeed a similar remark applies to most of the sections of this volume, the contents of which are too voluminous and diverse to allow of anything but a general encomium being offered. A table of contents facilitates reference, and numerous illustrations add to the attractiveness of the work.

CASSELL'S POPULAR GARDENING.

This useful publication continues to be issued in fortnightly parts. The work is edited by Mr. W. P. Wright, and the practical instructions given in the letterpress are elucidated by coloured plates and (for the entire volume) over a hundred other illustrations. It is well described as being "an illustrated cultural guide for amateur and professional gardeners," and should be appreciated by the public to whom it is specially addressed.

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Raspberries.—Examine these beds once again before placing nets over them to protect the fruits from birds, &c., and remove any further young growths springing up near the fruiting-canes that will not be wanted either for producing fruit or for increasing the stock next year. Be careful to avoid overcrowding. If the Raspberry-plantation be neglected at this season, the rows will become a mass of young useless canes. If the ground has not been mulched already, apply a good layer of well-decayed manure along each row as soon as the suckers that are not required have been pulled out, and then afford a good soaking with liquid-manure. The roots of the Raspberry do not penetrate deeply, and on light lands especially, feeding and mulching are essential. Apply a mulch and afford water to young suckers that were taken up at an early period and planted to produce fruit next year.

Gooseberries.—If the land is of a light nature a few good soakings of manure-water will more than repay the labour entailed. Bushes growing in deep loam will continue to bear and make suitable fruiting-wood for many years together, with but little attention, apart from the annual thinning and pruning, &c. Varieties which will be kept for dessert purposes should be afforded water at the roots, and if the leaves are infested with red-spider, syringe them thoroughly with clear water. Do not overlook the nursery beds; keep them free from weeds, and use the Dutch-hoe occasionally between the rows, affording water as the state of the weather may render this needful.

Strawberries.—For the making of jams and preserves those varieties of medium size and good colour should be grown. One of the best is Vicomtesse Héricart de Thury. Gather the fruits when they are dry and cool, and be careful not to bruise them by putting too many into one basket. Gather the fruits without the stalks, and let them be sent to where the jam is to be made as soon as they have been picked.

Packing large fruits of Strawberries for travelling.—These should be gathered very carefully before they become over ripe, and be packed when quite cool. If the fruits are gathered overnight, lay them out separately in a cool fruit-room until morning. Pack the fruits tightly, each one in a single leaf, resting on a layer of cotton-wool. Let the leaves be soft and pliable. When the box is filled, cover the fruits with thin Vine-leaves, and then a sheet of tissue-paper and thin wadding should complete the packing. Cord several boxes together, and label them "Fruit—with care," in red ink. Boxes are much better than hampers.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Cattleyas.—Such species as *Cattleya Mossiae*, *C. Mendeli*, *C. Skinneri*, *C. Warneri*, *C. intermedia*, *Lælia elegans*, *L. purpurata*, and a large number of the various hybrids which have recently passed their flowering stage, may either be re-potted, or if they have sufficient pot-room, should have some of the old compost carefully picked out, after which the plants should be re-surfaced with fresh material. When re-potting *Cattleyas* and *Lælias* the beginner should bear in mind that over-potting is an evil, especially where the plants are potted in the mixture now so generally advocated; the smaller the pot the better the safeguard against injury from excessive water at the roots. For full information as to re-potting these plants, compost, &c., the reader should refer to the *Orchid Calendar* in the issue for April 23, p. 262. At this season many of the plants after being disturbed by re-potting will not appear quite so robust as usual, and in some cases slight shrivelling of the pseudo-bulbs will occur; but no harm will result if they are afforded water with care, and the atmospheric conditions of the

house are what they should be. As the young growths lengthen and roots become numerous in the fresh material, the pseudo-bulbs will regain their normal condition. It is bad practice to saturate the plants with the object of inducing the pseudo-bulbs to retain their plumpness, because during the time the soil is wet the old roots are gradually but surely decaying, and the new roots will not thrive in excessively wet material. On no account should the soil below the surface moss be allowed to become very wet. Plants of *C. Warneri*, after making a quantity of roots, should be placed at the cooler end of the house, because, so far as growth is concerned, the plants will be at rest. The same remarks apply also to *Lælia purpurata* and its varieties; and it is advisable to keep this species in a resting condition as long as possible, because the growths that start at this season seldom produce strong flowering growths, while those that can be retarded, and that will recommence to grow during the autumn months, will form the best pseudo-bulbs, and produce more and better flowers. *C. gigas* and its free-flowering variety *Sanderiana* are developing their flower-buds, and should be kept at the warmer end of the house, so that the flowers may develop properly. A little extra water may be afforded to the roots. When the plants have flowered, gradually expose them to more sunlight and air. At the same time gradually decrease the supply of water at the root. The repotting of *C. gigas* and its varieties should be done if needful when the last-made growths commence to send forth new roots from their base. After repotting, only sufficient water to prevent undue shrivelling of the pseudo-bulbs will be needed. When the plants have become re-established they will enter upon a long season of rest, during which time they should be kept, if possible, in a cool dry, well-ventilated position in the intermediate-house.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Mint for Early Forcing.—From the present time until the middle of August insert occasional batches of cuttings in order to insure a good supply of Mint during winter. The work can be carried out indoors during wet weather. Prepare some boxes by placing a few crocks at the bottom, over which put a layer of rough leaves and turfy loam, from which the fine soil has been sifted. Fill up the box with equal parts leaf-mould, loam, and sand. Press this moderately firm, and having made the surface level, cover it with a slight layer of sand. Select strong, healthy cuttings from 3 to 4 inches long, and remove them with a sharp knife, cutting below a joint. After removing the two lower leaves, dibble the cuttings into the boxes at about 2½ inches apart. Afford a good watering, and place the boxes in a cool frame, shading them until they have become established; or during the present month they may be placed in a shaded position out-of-doors. In districts where the fungus attacks the leaves, it will be found that the cuttings now put in, if given proper attention, will in most cases remain healthy, and afford a supply of green leaves when the old plants in the beds are denuded of their foliage. In some localities where I have lived Mint was one of the strongest-growing plants, and grew very often in places where it was not wanted. Here the plant does best on the north side of a wall, but in such a position it is a long time starting into growth in the spring. A quantity of the leading growths should now be cut and tied up into small bunches. Hang these up to dry in an open shed; they will be found useful if at any time the supply of green Mint should run short.

Chives.—These plants are now in bloom, and the flowers should be cut off unless required for seed.

General Work.—Attend to the thinning of crops Turnips and Kohl Rabi are apt to get overcrowded, and if neglected the roots will be inferior in quality. Many crops require to be planted out, and no time should be lost before

carrying out this work, as the season is fast advancing. Peas require to be afforded stakes, and should be earthed-up. In some of the southern counties a sowing of seeds of some approved early variety may yet be put in. Maintain a supply of salads by the sowing of seeds at frequent intervals.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Vineries.—In good weather fire-heat will only be required at night, but at night the temperature outside continues very low at present, being occasionally as low as 35°. In dull wet weather the fires should be pushed a little early in the morning to raise the temperature to 75°. Give close attention to ventilation, and allow no moisture at any time to condense on the berries. Where Grapes of Muscat of Alexandria are approaching ripeness, afford them a high temperature during the day if it can be obtained from sun-heat. The temperature at night should not fall below 70°. Do not allow the borders inside or outside to become dry before affording them water. At closing time in the afternoon damp very freely all available surfaces in houses in which the Grapes are swelling, using for this purpose diluted liquid-manure. This will maintain a humid atmosphere charged with ammonia, which will check red-spider. During the "stoning" period in late houses afford liberal ventilation as a means of preventing injury from scalding, afterwards less air will be necessary until the berries commence to colour. Examine the bunches, and remove small and seedless berries with care, or a blemish will result.

Peaches and Nectarines.—When the fruits have been gathered in succession-houses, treat the trees as previously advised for those that fruited earlier. Keep the borders moderately moist in houses in which the fruits are being gathered, and afford liberal ventilation. In houses containing fruits approaching to maturity discontinue the syringing. Trees in later houses where "stoning" is completed should have all laterals springing from the shoots of this year and any over-strong shoots removed. Tie in the young growths, but avoid overcrowding. Expose the fruits above the foliage in order that they may attain to high colour and good flavour. Afford plenty of water to the roots of the trees, and use the syringe freely to keep the foliage clean.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

The Wild Garden.—The grass may now be cut where Narcissus and late-flowering bulbs have flowered. Plant-out any Lilies that have flowered in the houses. All ground should be marked that contains bulbs, so that additions may be made in the autumn if desirable. Allow the seed pods to remain on Bluebells, and any other bulbous plants that it is desirable should increase in quantity. Heaths will require to have water afforded them should the weather continue dry. Train the growths of climbers on trees and bridges, and afford them water. Remove the grass and weeds from about the stems of the climbers. Afford repeated waterings of liquid-manure to Camellias and Palms.

Pansies and Violas.—Propagation should be commenced as soon as possible. The small off-sets make the best cuttings, and those that can be taken off with a small heel to them; the large growths are useless. Choose a shady situation, and prepare some good gritty soil, such as scrapings from the roadway. The weeds that come up in these scrapings are a drawback, as the cuttings are liable to be disturbed when pulling them out, but if the weeds are removed soon enough little harm is done. When taking the cuttings they should be immediately put into a can with water, and inserted in the soil before they flag. A three-light frame is more satisfactory for this purpose than putting the cuttings in the open. If there

is no frame available, put a post and rail round the beds to support some material for shading the cuttings.

Shrubberies.—Hoe the surface of the ground. Weeds that cannot be dislodged by means of the hoe should be cleared out with the rip-hook; mulch and afford water to shrubs that require moist conditions. Dry winds are very penetrating, and have a bad effect on shrubs that have been moved recently. Afford stakes to any that require support.

Rockery.—Frequent waterings will now be necessary, and the work should be done in the evening. Remove the seed-vessels from plants, and make the plants appear as tidy as possible. *Adiantum pedatum* requires abundance of water. Afford fresh sphagnum-moss to *Sarracenias*; these being planted in a moist and shady position will not require much attention.

General work.—Make good all arrears of work, such as edging and weeding of walks, clearing shrubberies, scythe-mowing under the boughs of specimen trees, &c. Where the gravel on the paths is of a loose nature, it is difficult to keep it in proper order in dry weather. It is of little use to roll the paths without first applying a good soaking of water. Weed-killer may be applied where there is no Box edging. With care it may be used close to the grass verge. Let the work be done during settled weather. Turf that was laid in the spring will require watering. Grass verges should be trimmed neatly; if they are allowed to grow too long the seeds will fall on the walk and cause much trouble.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Kalanchoe flammea.—The propagation of this species by means of the leaves and basal shoots may be undertaken directly the plants have done flowering. The young shoots may either be placed singly in small pots, or may be inserted to the number of eight or ten in 5-inch pots, which have previously been filled with a compost of loam and sand in equal proportions. In propagating from the leaves, let these be pulled carefully off the plant, and without further preparation lay them on the surface of the soil in pots or pans filled with the compost named above. The leaves may be placed somewhat closely together, and each one should be provided with a peg to keep it in position. Only the base of the leaf should be covered with soil. Place the pans and cutting pots on a shelf in a house having an intermediate temperature, or at the cool end of the stove, and withhold water until it is seen that roots have been formed, when the soil may occasionally be lightly watered. There is a danger of the leaves rotting if water be given earlier. In due course the bases of the leaves callus over, then the roots are produced, and finally the young shoots appear. When these are about 2 inches high they should be potted singly into small pots. The compost for this potting may consist of three parts loam and one part leaf-soil, adding plenty of coarse silver-sand and some broken brick-rubble or crocks to keep the soil porous.

Bulbs for Early Forcing.—No time should be lost in ordering bulbs of Roman Hyacinths, Polyanthus Narcissus, Freesias and retarded Liliums, if it is desired to have these in bloom at the earliest date possible. For this purpose bulbs of good quality should be obtained, and this is especially the case with regard to Roman Hyacinths. Polyanthus Narcissus Early Snowflake is a very desirable variety for early forcing. Among the retarded Liliums the varieties of *L. speciosum* and *L. longiflorum* will be found most serviceable.

Miscellaneous.—Lapagerias growing freely in tubs or pots will require copious supplies of water, and occasionally weak liquid-manure may be afforded them. If large blooms of tuberous-rooted Begonias are required, remove the female flowers as soon as they can be seen, and leave only one male bloom to each flower-stem.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS.

FRIDAY, July 22 { Opening of the New Hall of the Royal Horticultural Society by His Majesty THE KING (at noon).

FOR THE ENSUING WEEK:

SATURDAY, JULY 9 { Windsor Rose and Hort. Soc. Exhibition.
Warminster Rose Show.

TUESDAY, JULY 12 { Roy. Hort. Soc. Show at Holland House, Kensington (2 days).
Wolverhampton Floral Fête (3 days).
Hort. and Rose Show at Gloucester.

WEDNESDAY, JULY 13 { Nottingham Hort. Soc. Show (2 days).
Ranelagh and Dist. Hort. Exhibition.
Hort. and Rose Shows at Formby, Harrow, Reading, Stevenage, and Thornton Heath.

THURSDAY, JULY 14 { Maidenhead Horticultural Soc. Show.
Weybridge and District Hort. Soc. Show.
Brentwood Hort. Exhibition.
Highgate Hort. Soc. Annual Exhibition.
Woodbridge Flower Show.
Eltham Rose and Hort. Exhib.
Potters Bar and Dist. Hort. Show.
Rose and Hort. Shows at Bath, Helensburgh, and Southsea.

FRIDAY, JULY 15 { Rose and Hort. Shows at Gresford and Ulverston.
Roy. Bot. Soc. Lecture.

SATURDAY, JULY 16 { Manchester Hort. Soc. Rose Show.

SALES FOR THE WEEK.

TUESDAY NEXT—Clearance Sale of the whole of the Orchids, Stove and Greenhouse Plants, &c., at the Old Hall, Southborough, Tunbridge Wells, by order of the Exors. of C. B. Powell, Esq., by Protheroe & Morris, at 11.30.

FRIDAY NEXT—Fine Imported Orchids, by order of Messrs. Sander & Sons.—200 lots Established Orchids, 300 Cattleya Mendeli, Retarded Lilies, Spiraeas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63° 3'.

ACTUAL TEMPERATURES:—

LONDON.—July 6 (6 P.M.): Max. 77°: Min. 55°.

July 7.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden (10 A.M.): Bar. 30.2; Temp., 66°. Weather, bright sunshine.

PROVINCES.—July 6 (6 P.M.): Max. 72° 3', East Coast of England; Min. 55°, North of Ireland.

blooms with which Messrs. HARKNESS, of Hitchin, secured the Nurserymen's Challenge Trophy for the year. Mr. E. B. LINDSELL's lot, which secured the Amateur's Trophy, was scarcely inferior. The minor groups were almost invariably good—some remarkably so.

If we had to pick out the best Roses in the Show, we should select Mildred Grant, Kaiserin Augusta Victoria, Frau Karl Druschki, White Maman Cochet, and Susanne Rodocanachi.

We must, however, refer to our detailed report for full particulars of a memorable Show—so fine, that one could but lament the enforced absence of the President, Dean Hole, and of the founder, Rev. H. HONYWOOD D'OMBRAIN. We heard that lament expressed on many sides.

This has been a wonderful Rose year generally, and, as is often the case, some one or two Roses assert their supremacy. Wherever we have been this year, William Allen Richardson has been flowering with extraordinary profusion and beauty. So has our old friend Gloire de Dijon, but Blairii No. 2, of which we give a figure in our Supplementary Illustration, has been a disappointment—how far this is general we do not know. La France (see fig. 7, p. 19) still holds her own; and Ulrich Brunner (see fig. 6, p. 18) was present in a number of collections at the Temple.

Lady Gay (fig. 13, p. 29) is one of many seedlings from Crimson Rambler, the flowers being of a cherry-pink colour. For the opportunity of illustrating it we are indebted to Mr. M. H. WALSH, Rose Specialist, Wood's Hole, Massachusetts, who describes it as a Rose of the highest merit. From the same gentleman we have received an illustration (fig. 12, p. 28) of his group of Rambler Roses at the Spring Exhibition at Boston U.S. The group comprises Debutante, Hiawatha, Babette, Minnehaha, Sweetheart, and others. The small plants in six-inch pots are "Wedding-bells," a semi-double pink-coloured variety. The illustration shows how well adapted these Roses are for forcing.

Whilst Teas and Hybrid Teas are supplanting Hybrid Perpetuals, new blood has been introduced by Lord Penzance's Briars and their derivatives, and by the crosses with Wichuriana. The resources at the disposal of the rosarian are vast and varied. Not the least service that the National Rose Society can render is to encourage their development.

It is seldom that the National Rose Society awards two Gold Medals to new varieties exhibited at the metropolitan exhibition, but at the recent show it did so. The varieties, "Dean Hole" and "Mrs. O. G. Orpen," thus distinguished are described on p. 30, as well as they could be from the specimens exhibited, but it is not until they have come into general cultivation that their value can be accurately determined. Two other new varieties were awarded Cards of Commendation.

HORTICULTURAL CLUB.—An excursion of the members of the Club is fixed for Wednesday, July 27, to Langley Park, near Slough, and East Burnham Park, where Mr. and Mrs. HARRY VEITCH offer hospitality. Burnham Beeches, and Dropmore will be visited, and the party will dine at Skindell's Hotel, Maidenhead, at 6.30. Those intending to take part in this outing should communicate with the Secretary, Mr. E. T. COOK.

SIR DANIEL MORRIS, who is now in this country for a short time, was the recipient of the degree of D.C.L. from the University of Durham on June 22.

FORESTRY IN NORTH WALES.—The University College at Bangor has instituted a Forestry Department under the management of Mr. FRASER STOREY.

FLOWERS IN SEASON.—From Mr. HENKEL, of Darmstadt, we have received flowers of:—

Erigeron speciosum var. *rosca*.—A species of moderate height, with sessile, cordate, lanceolate leaves, and heads of flowers each about 1½ inch across, with spreading narrow lilac rays and yellow disc florets. It is a very attractive plant.

Delphinium.—A new annual variety with flowers on long, slender stalks loosely arranged. The flowers are quite regular with no spur, doubled by multiplication of petals; the segments are deep blue, the inner ones bearing a central crest of golden-yellow hairs. A very handsome and interesting form.

Gentiana affinis.—A species with broadly lanceolate leaves, about 4 inches long and 1 in breadth. Flowers blue, in close tufts in the axils of the leaves, near the top of the stem; each flower an inch or more long, tubular, with a short, five-lobed limb, the segments erect, scarcely separating one from the other. It comes from Arizona.

MR. ARCHIBALD SMITH.—We occasionally note the fact that a large proportion of the most distinguished horticulturists of the United States are Britons born. So successful are they that they do not as a rule return to the land of their birth. But now we have to chronicle an exception. Mr. ARCHIBALD SMITH, for sixteen years manager of the seed business of JOSEPH BREEK & SONS, of Boston, Mass., is about to return to this country. Mr. SMITH was born at Stranraer, served in various capacities, amongst others under PETER HENDERSON, when that gentleman was manager for Mr. PERKINS, of Northampton. Eventually Mr. SMITH went to the States, where, according to the *Florist's Exchange*, he secured the respect and goodwill of his associates. Mr. SMITH has acquired the seed business in Market Street, Oxford, carried on by Mr. PRINCE.

MR. LEWIS CASTLE, the manager of the Duke of BEDFORD's Experimental Fruit Farm, who has had great experience in practical horticulture, the cultivation and marketing of fruit, and who is the author of various prize essays, is open to an engagement.

FIRE AT AN EXETER NURSERY.—A fire broke out recently at the South Devon Nurseries, Alphington Road, Exeter, the property of Mr. CHARLES SCLATER. The property consists of a dwelling-house and potting-shop. The house and its contents were entirely destroyed in a very short time. Mr. SCLATER and his family, who had retired to rest, had difficulty in escaping. The house, a large one, and the property destroyed is estimated at between £800 and £1,000. The loss is partially covered by insurance.

THE WEST INDIA COMMITTEE CIRCULAR.—A special number devoted to the agricultural industries of the West Indies was issued on the 28th ult. It opens with a portrait of Sir DANIEL MORRIS, the illustration being accompanied by a brief account of his career. What he has done for the development of cultural industries in the West Indies since his appointment as Imperial Commissioner of Agriculture is narrated in some detail in the number before us, which also contains the substance of a lecture delivered by Sir DANIEL before the Committee, and a report of his speech at the dinner of the Club on the 22nd ult. Whilst not neglecting the interests of the sugar planters, stress is laid upon other subjects, such as fruit-growing, Onion-culture, Cotton cultivation, and other subjects, which are shown to be very valuable items in developing the resources of the island. Scientific research and the spread of agricultural education are also subjects to which Sir DANIEL has done his best

The Temple Rose Show.

THE Committee of the National Rose Society ought to feel happy. The weather on Wednesday was all that could be desired. The arrangements worked smoothly, thanks to the excellence of the organisation; and as to the Roses—well, we do not think the most critical of oldest inhabitants could find serious fault. The Show was held in two long narrow tents, and one of wider dimensions. On entering there were pergolas and climbing Roses, which formed a pretty feature. In these tents also were arranged the groups of "decorative" Roses, for the most part much too densely packed and heavy. In the larger tent were some exquisite table decorations in the centre, and cut Roses along the sides. Taking one class with another, the quality of the Roses as to size, texture, colour, and luminosity was superb. We do not think anything finer in its way was ever seen than the collection of seventy-two

to foster, so that the improved prospects of the West Indian industries are due in no slight measure to the enlightened energy of the Commissioner. A most interesting communication to this periodical is furnished by H. HESKETH BELL, Esq., the Administrator of Dominica. The whole of the interior, we are told, is covered by virgin forest. Of course this is destined in the future to give place to plantations of Cacao, Rubber, perhaps Cotton, and other tropical products. A road 17 miles in length has been constructed into the centre of the island, so that the development of the country needs now the judicious outlay of capital and the enterprise of educated cultivators. It is to be hoped that means will be taken to preserve in its natural condition a considerable proportion of the island, and to secure the services of some competent collector to investigate its botanical riches.

MR. R. C. GAUT (Leeds University), who was successful in gaining the National Diploma in Agriculture in the recent May examination, has now passed the final examination for the B.Sc. Degree (first division) in Agriculture, Victoria University. The degree was conferred last Saturday at Manchester. Mr. R. C. GAUT received his training in the science and practice of Agriculture and Horticulture in the following places, viz., Berwick Hall, Shrewsbury; Établissement Horticole (Mons. DELARUYE CARDON), Ghent; Royal Botanic Gardens, Kew; Alton Towers; and for the past five years at the Yorkshire College (now University of Leeds); and the Yorkshire Council for Agricultural Education's experimental farm at Garforth, near Leeds.

PANSIES AND VIOLAS FROM SCOTLAND.—More attention has been devoted to these old florists' flowers in the North than anywhere else in this country, and it is quite in keeping with the order of things that we received quite recently a number of handsome varieties of these old-fashioned flowers from the firm of Messrs. DOBBIE & Co., Rothesay. The great improvement which has taken place in these flowers was evinced in this collection, for not only were the flowers of large size, but the colours and markings on them were most handsome, and among the selfs especially were flowers that were of the most lovely shades of colour. The popularity of these plants for bedding purposes in spring and early summer can be gauged from the enormous quantities that pass through Covent Garden Market at that season.

BOTANICAL AND HORTICULTURAL REPORTS FROM OTTAWA.—There have recently been published the Reports of the several departments of the Ottawa Experimental Farms (Appendix to the Report of the Minister of Agriculture for 1903). In these reports will be found the results of many important and carefully conducted experiments in agriculture, horticulture, and arboriculture, the outcome of practical and scientific work in the fields, barns, dairy and poultry buildings, orchards and plantations at the several experimental farms; also of scientific research in the chemical laboratory bearing on many branches of agricultural and horticultural work, and of information gained from the careful study of the life histories and habits of injurious insects, and the methods by which noxious weeds are propagated and spread, together with the most practical and economical measures for their destruction. In the report of the Entomologist and Botanist this subject is fully treated and illustrated.

BEGONIA UNIFOLIA.—Professor WILLIAM TRELEASE contributed, at the St. Louis meeting of the American Association for the Advancement of Science, an interesting paper on an ecologically aberrant Begonia, found by him last summer a few miles above Iguala, in the Mexican State of Guerrero. "The plant was growing in abund-

ance, and differed from all the other species that I had seen in possessing only a single radical leaf, through the sinus of which a few-flowered scape arose, naked except for a rather small leaf-like bract subtending its single branch, and much smaller bracts in the inflorescence proper. The plant has been referred to the *Huszia* group, which is that of the so-called tuberous Begonias, some of which are now popular in cultivation, nearly all of them coming originally from the Bolivian or Peruvian Andes. *B. monophylla* is said to produce a tuber 9 lines thick, and to have a single, stalked, 12 to 15-nerved, very shortly pilose leaf, which is cordate or sometimes peltate, and rather large flowers. Aside from its northern distribution for a species of the section *Huszia*, the rather uncertain source of its closest relative, *B. monophylla*, and the single leaf which, like the latter, it produces, *B. unifolia* is of interest in that its single large leaf is closely applied to the rock or talus in the crevices of which it is rooted, so that its subterranean parts are thus given the same kind of protection afforded by the similarly appressed basal leaves of the stag-horn Ferns, *Platyserium*."

DESTROYING ALGÆ IN WATER SUPPLIES.—The importance of maintaining all water supplies at the highest degree of purity and wholesomeness is too well recognised to require discussion. The United States Department of Agriculture has recently published a bulletin dealing with this problem of purifying water, and Messrs. G. T. MOORE and KARL F. KELLERMAN, in the summary of their pamphlet, declare that "the disagreeable odours and tastes so often present in drinking water are due almost exclusively to algæ, although the economic importance of studying these plants has not been recognised until recent years. These algal forms are widely distributed, and reservoirs are often rendered unfit for use by their presence. The methods now known for preventing the objectionable odours and tastes have been found either too costly or ineffectual. A new, cheap, harmless and effective method was therefore required to rid reservoirs of the pests, and it has been found that copper sulphate in a dilution so weak as to be colourless, tasteless, and harmless to man is sufficiently toxic to the algæ to destroy or prevent their appearance. The mode of application makes this method applicable to reservoirs of all kinds, pleasure ponds and lakes, fish-ponds, oyster-beds, watercress-beds, &c. It is also probable that the method can be used for destroying mosquito larvae. At ordinary temperatures one part of copper-sulphate to 100,000 parts of water destroys typhoid and cholera germs in about three to four hours. The ease with which the sulphate can then be eliminated from the water seems to offer a practical method of sterilizing large bodies of water. Definite knowledge in regard to what organisms are present, the constitution of the water, its temperature, and other important facts are necessary before it is possible to determine the proper amount of copper sulphate to be added. A microscopical examination thus becomes as important as a bacteriological or chemical analysis. No rule for determining the amount of copper sulphate to be added can be given. Each body of water must be treated in the light of its special conditions."

"FLORA AND SYLVA."—The July number contains figures of two showy *Achilleas*, the one with white flower-heads, *A. lingulata*; the other with dense yellow heads destitute of ray-florets, *A. clypeolata*. An enumeration of the species suitable for cultivation is given. A similar list of the species of *Viburnum* is published. What a valuable thing *Nicotiana Sandera* is, is shown by the coloured figure, representing a form with deep rose-coloured flowers. It is a hybrid between *N. Forgetiana*, hort. Sander, crossed with *N.*

alata. This plate is also accompanied by an enumeration of the cultivated species of *Nicotiana*. The rich collection at Castlewellan are passed in review, and a protest made against defacing our gardens with statues.

GARDENERS' CRICKET.—Last week the students at the Royal Horticultural Society's Gardens, Wisley, played a cricket-match with the neighbouring village of Ripley, the students winning by sixteen runs. Mr. HOULSTON for the students carried his bat through the innings for forty-one runs, not out.

"BOTANICAL MAGAZINE."—The July number contains coloured figures and descriptions of—

Vellozia trichophylla, Hemsley, t. 7962.—A very striking, shrubby *Amarylloid* from East tropical Africa, figured in our columns in 1903, vol. ii., p. 425, fig. 167, under the name *V. equisetoides*.

Geonoma gracilis, Linden and André, t. 7963.—A very elegant tropical Palm with arching pinnate foliage, the segments being broadly linear. It is a native of tropical America.

Spathoglottis Hardingiana, Parish and Reichenbach, t. 7964.—A native of Northern Burma, with loose, elongated, many-flowered racemes of lilac flowers, differing from its near allies in the small lateral lobes of the lip.

Chrysanthemum ornatum, Hemsley, t. 7965, figured in *Gardeners' Chronicle*, 1904, i., p. 51, as *C. marginatum*, which is erroneous.

Pitcairnia spathacea, Grisebach, t. 7966.—A species with narrow, elongate, spine-margined leaves, and panicles of rose-coloured flowers. Native of Argentina.

ICONES SELECTÆ HORTI THENENSIS.—The fourth volume of this valuable publication has now been issued. The plants figured in the two last fascicles are enumerated below. The illustrations are excellent and the critical text full of information of great value to botanists. The illustrations are taken from plants cultivated in the garden of M. VAN DEN BOSSCHE at Tirlemont, and the work is to be had only from his agent at 5, Grande Montagne, Tirlemont, Belgium.

CRASSULA TRACHYANTHA, t. CII.
GAYLUSSACIA RESINOSA, t. CLII.
PARACARYUM HELIOCARPUM, t. CLIII.
CALCEOLARIA VIOLACEA, t. CLIV.
CHENOPODIUM NITRARIACEUM, t. CLV.
BILLARDIERA SCANDENS, t. CLVI.
TELEPHIUM IMPERATI, t. CLVII.
FRAXINUS MARIESII, t. CLVIII.; a Veitchian introduction, very ornamental in the flowering stage.

HOLMSKIOIDIA SANGUINEA, t. CLIX.; a native of subtropical Himalayas, belonging to the Verbenaceæ and allied to *Clerodendron*. The calyx expands into an unsymmetrical, brightly-coloured cup encircling the base of a curved tubular corolla.

ENCEPHALARTOS VILLOsus, t. CLX.; this plate is accompanied by an enumeration of all the species described up to this date. We may point out that the *E. acantha*, described by us in 1878, is referred by Sir W. THINSELTON DYER to *E. Fridericii* Gussone (see *Gardeners' Chronicle*, January 4, 1879, p. 11).

FUNGUS CO-OPERATION IN ORCHID ROOTS.

—The following are the conclusions arrived at by M. NOËL BERNARD as published in the *Comptes Rendus*, t. 138, p. 828, March 28, 1904:—"I have already reported," says M. BERNARD, "that I have succeeded in isolating by pure cultures an endophytic fungus of an Orchid. This hyphomycete appeared in some hybrid Cattleyas (*C. Mossiæ* × *Lælia purpurata*) grown in the houses of M. MAGNE, of Boulogne-sur-Seine. I have demonstrated that seeds produced by cross-fertilisation of the same plants, do not germinate when sown aseptically or with any ordinary micro-organisms; while on the contrary, if an aseptic seed is contaminated with the hyphomycete in question, the seeds do germinate and produce young plants similar to those raised under glass, and infested as they are. Doubtless, therefore, this hyphomycete is really the normal endophyte of this plant. Starting

from these premises, M. BERNARD endeavoured to cultivate the endophytes of various other Orchids. To accomplish this he simply collected on the spot, in exhausted tubes, the roots of Orchids, the infested parts of which were then transferred to "salep gelose" in sterilised tubes. From the roots of *Cypripedium insigne* grown in a house in the Caen Botanic Garden, he obtained with other micro-organisms a hyphomycete morphologically identical with that which he had isolated from the *Cattleya* plants. The germination of the seed showed that the fungus was really a normal endophyte. The thick, fleshy roots of *Spiranthes autumnalis*, gathered in September near Alençon, furnished him in various experiments with a hyphomycete which does not differ in morphological characteristics from those previously mentioned. Although he has not, in this case, tested the germinating powers of the seeds, it is almost certain that this is indeed the endophyte of this Orchid.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. CHARLES FOSTER, of University College Gardens, Reading, has forwarded the sum of £1 2s. in aid of the above Institution, being the amount collected amongst the Oxfordshire County Council Class when visiting the College Gardens.

THE "HORTICULTURAL DIRECTORY."—We are asked to state that the editor of the *Horticultural Directory*, 12, Mitre Court Chambers, Fleet Street, London, would esteem it a favour on the part of all head gardeners who have changed their addresses since October last if they will send him a notice of their new address. Nurserymen, seedsmen, and florists who have changed either their address or title are likewise requested to notify the editor.

PUBLICATIONS RECEIVED.—*The Hour Glass* (Mitford Lane, Strand).—*The Queensland Agricultural Journal*, May. With the usual articles upon agriculture in general, and tropical industries in particular.—*Thirty-first Annual Report, Board of Park Commissioners, San Francisco*, for year ending June 30, 1902. A general synopsis of the work accomplished with the appropriation allotted to the park. Details many improvements.—*Bulletin No. 97 of the Hatch Experiment Station of the Massachusetts Agricultural College: A Farm Woodlot*. The purpose of this Bulletin is to set forth a single definite concrete example of practical forestry under conditions typical of nearly the whole State, and of large areas in neighboring States. Hence it deals with the products required, the species of trees, their reproduction and succession, and it is appropriately illustrated.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

AN INTERESTING PHENOMENON.—I have a large plant on a south wall of *Clianthus puniceus*. It is about three years old. For the last two years it has insisted in throwing out flower-buds in November, which are all destroyed later on by frost, as well as a considerable portion of the plant itself. This is an Australian plant, and November in Australia would be about the beginning of summer. It would seem therefore that this plant cannot adapt itself to a change of climate in its inflorescence, and take to flowering in the beginning of our summer, but retains the habit of throwing out flower-buds at the time of the Australian summer! In the open here it is quite useless, as it is half killed every winter. Near Penzance, however, it seems to fare differently, for in the *Gardeners' Chronicle* of March 5, p. 156, it is stated that the *Clianthus puniceus* was in flower in the first week of February. E. Bonavia, M.D.

BAMBOOS, NYMPHÆAS, ETC., AT GUNNERSBURY HOUSE.—The thirty species and varieties of Bamboo which Mr. James Hudson, gardener to Leopold de Rothschild, Esq., has so skilfully arranged in the Bamboo-garden there have thoroughly established themselves, and all are vigorous, and many have assumed gigantic proportions.

Mr. Hudson considers it most necessary in establishing these and many other foreign plants in the open ground to give copious supplies of water, especially in the early part of the summer. In one part the large foliage of *Juglans Sieboldi* and of *Aralia mandshurica variegata* are very effective. The many varieties of *Nymphæa*, white, yellow, and red, have formed great patches of colour on the lake, and in the more sheltered garden nooks the blue *Nymphæas* and the *Nelumbiums* are about to make a good show. The Japanese-garden, with its quaint Bamboo bridges and summer-houses, surrounded by native Japanese trees and shrubs, forms a remarkably novel feature; and the imitation "ruin," so cleverly formed by Mr. Hudson, facing a blank wall, to represent parts of an old castle, is now beautified by a fine set of rock-plants, Roses, &c., flowering in the interstices provided for them. Roses are in great profusion at Gunnersbury House this season, one bed of over 500 plants of *Caroline Testout* being specially beautiful. J. B.

OSMUNDA REGALIS.—In the *Gardeners' Chronicle* for June 25, p. 407, I was interested in reading of a fine *Osmunda* in the St. Petersburg Garden. The dimensions given of that plant induced me to measure one in the grounds here, which I discovered about five years ago growing in a wood upon this estate about 16 miles from its present position. The stem is 2 feet high, and has a circumference of 8 feet, upon which are seven crowns, and the number of fronds seventy, the great proportion of them being 2 to 3 feet long. I had the honour during the month of June to accompany the members of the Ashmolean Natural History Society of Oxfordshire through the grounds here, when one of the party informed me that this plant had been removed from its original position, to which some had been frequent visitors. My employer was informed that this fine plant had been moved. Of course he possessed the knowledge that his gardener was the culprit. I state this incident to show the interest sometimes taken in objects which may appear obscure. W. Fyfe, Lockinge Gardens, Wantage.

LARGE-FLOWERED MIMULUS.—Your correspondent on p. 12 may be interested to know that the giant-flowered *Mimulus* was raised in our nurseries at Forest Hill. On May 24, 1887, we were given a First-class Certificate by the Royal Horticultural Society for our strain, which is now distributed under the name of *Queen's Prize*. James Carlier & Co.

BRITISH GARDENERS' ASSOCIATION.—The Royal Caledonian Horticultural Society is making arrangements for a special train to take gardeners from all parts of Scotland to the Shrewsbury flower-show on August 17. If Scotch gardeners wish to benefit by the above association this would be a good opportunity to call a meeting, say at the Raven Hotel, Shrewsbury, to discuss the matter. If Mr. W. Watson could attend such a meeting to explain how far the association has progressed, and open a branch office in Edinburgh, with a committee of gardeners and nurserymen to work in unison with the head office and receive subscriptions, and take particulars of candidates in the North, who are naturally unknown to Southern committee, it would do good. Jas. Hamilton, gr. to Sir Jas. Miller, Bt., Manderston, Duns, Berwickshire. [The further remarks about the management of the Association should be addressed to the Committee. Ed.]

THE COLOUR IN FRUITS.—I do not think that "F. M.'s" were expression of doubt, on p. 12 of your last issue, as to the relevancy of my "quasi-scientific assertion," helps us much. The difficulty of absolute proof being reached by any kind of experiment is probably greater than "F. M." supposes. We shall have to be content with corroboration by facts pointing more or less in the same direction. Against a few varieties of Apples named by "F. M.," I have marshalled the whole of the exhibition table-fuls, as formerly shown at the Crystal Palace, representing hundreds of varieties, generally poorly coloured in continuously dry seasons. Indeed, I can add a piece of evidence which further confirms my theory. About four or five years, ago in one

of the annual shows referred to, one of the best known West of England fruit-tree growers, on an occasion when the general show was conspicuously green, had a very well-coloured exhibit. "I presume the difference between your well-coloured exhibit and the general green tone of the show arises from your irrigating or well watering your fruit plantations?" "Certainly that is so; we could not in the absence of rain obtain such colour without the application of plenty of water." Of course this leaves the question of the actual influence of nitrification on colouring still merely an hypothesis, but there may be observers and experimenters who could add to the evidence of which I gave three examples on p. 395 in your issue for June 18, and whose records might contribute to the solution of the problem. Considerable differences of colouration in Apples may be seen at any large show as the result of a combination of influences of aspects, soil, elevations, and weather, &c. The very excellent, far too little known early autumn Apple, *Gravenstein*, when produced in Europe, is prominently yellow with a few lively crimson stripes on the sunny side. The same variety, as imported since a couple of decades from Canada and sold annually at Covent Garden, is invariably rich crimson with no vestige of yellow; also its quality is far less desirable than in home-grown fruit, not unlike the difference between the Canadian Ribston and this genuine British favourite, which is also much in favour of the home-grown article. H. H. Raschen, *Sidcup, Kent*.

PROGRESS.—I read in the last issue of the *Gardeners' Chronicle* two most interesting articles—viz., 1, "A Memorable Week;" and 2, "Progress." These show many golden opportunities for the rising generation who intend finding their living in one or other of the various branches of horti-agriculture, &c. There is, of course, always much to learn in the cultivation of anything; but in my opinion the difficulty does not lie so much in the want of knowledge how to cultivate as to how to find a remunerative market after the crops have been grown. I am here as an old practitioner with a small bit of land, the staple of which will grow anything; but I am at a loss to know how to turn it to remunerative account, and would be very pleased to have a visit of any of those new scientific horticultural experts who know so well not only how to make things grow, but also how to make them pay. At the dinner of the Gardeners' Royal Benevolent Institution there were some very excellent speeches, but the one which pleased me most was that of Mr. George Dickson, of Chester, who said "he was afraid that if they trusted too much to science, rather than to practice, it would be to the country's disadvantage." A good market is worth cartloads of all this so-called science. It is our markets and the carriage to them which want putting on a proper basis. After that we will be very pleased with all the help science can give us. W. Miller.

HOLLY-TREE DENUDED OF BARK.—In reference to the Holly-tree denuded of bark, mentioned by Mr. Storrie on p. 11, I may mention two cases of bark-stripping I saw. 1, Some Beech-trees that were stripped by a horse 6 feet from the ground; they lived for two or three years, but the foliage gradually got weaker, till the store of material in the cells was used up. The Beech-trees were at Moffat, being from 1 foot to 18 inches in diameter. One tree had a thin strip of bark left leading to one branch; the difference between that branch and other parts of the tree was very noticeable. 2, A plant of *Vitis heterophylla variegata* that had about half an inch of its stem injured, so that there was a zone of dead dry wood, but as it did not stop the flow of water the top went on growing, but in a sickly manner, and so would have died later. Alex. D. Benney, 14, Knowe Terrace, Stanwix, Carlisle.

— On p. 11 there was a figure of Holly trees denuded of bark. I have no doubt if rabbits did not do all the mischief they did their share. If rabbits can get any foot support, they will climb up a good way. When starved for other food, and taking advantage of a deep fall of snow, they will bark both big trees and small ones a long way up. They are very fond of eating the bark round the butts of even Beech trees. From these

depredations trees never thrive. It is not uncommon, where an excessive number of rabbits is preserved, for breadths of underwood totally to disappear. They are very fond of Hazel. Deer will work much mischief if allowed to roam and browse in woods. Horses for downright mischief will bark trees. They are very fond of browsing on Scotch, Austrian, and other Pines, as well as Spruce and all other varieties of the Fir tribe, i.e., when they can reach these branches in a young state. They will not touch Cupressus Lawsoniana, but sheep will eat it greedily. Water-rats (voles) are very interesting little animals, but they, too, are often mischievously

THE ROSE SEASON BEGUN.—It is always interesting to observe at this season of the year which of the many and widely contrasted varieties of the Rose come first into bloom. One of the earliest of these is invariably the beautiful Austrian Briar, Rosa Harrisoni, one of the loveliest and most evanescent of all flowers. Nothing could be sweeter than this incomparable gem; nothing more transitory. But perhaps it is all the dearer to our fond imagination that its life is so brief. An exquisite contemporary of Rosa Harrisoni in my garden is Jeannie Deans, one of the most richly endowed of the famous Penzance Briars, semi-double, with crimson flowers of the

which has much the same colour and characteristics as Margaret Dickson, is the extremely charming flesh-coloured Clio, raised many years ago by Mr. Wm. Paul, of Waltham Cross. Not seldom those varieties which receive least attention grow most vigorously and flower most luxuriantly. A Rose, not less than a Lily or a Carnation, may be greatly weakened or even killed by kindness, resulting in what is termed hypertrophy. This is especially true of late-planted and somewhat delicate varieties, which have received too many manurial stimulants before they have become correspondent with their environment, or in other words habituated to the



FIG. 11.—VIEW OF THE ROSE GARDEN AT KING'S WALDEN, BURY, TAKEN FROM THE TOP OF THE CHURCH.

inclined. They will set to work and gnaw round the roots of young Poplars, Oaks, and Hollies until they either tumble them down or the trees suddenly wither, and on examining the base you will find the water-vole has been there. They do not appear to do this for food, but for downright mischief. I put a barrage across a small streamlet here, which dams the water for a distance of 150 yards. This forms a delightful home for the voles. They are rather tame, and will allow one to approach pretty close before they dive into the water. I call them my little beavers. It is amusing to see them swimming along the water, and they can run quite as nimbly along the bottom of the stream as they do on dry land. What a pleasure it must be to an animal in hot weather to be naturally amphibious! *W. Miller, Berkswell.*

brightest hue, and very fragrant leaves. The artistic contrast created by those varieties is grandly effective, and I would strongly advise all cultivators who possess them to grow them side by side. Among Hybrid Perpetuals, one of the earliest is Margaret Dickson, which, seeing that one of its parents was Lady Mary Fitzwilliam, is really a half-hybrid Tea. This I cannot but consider the finest variety for garden cultivation that Ireland has produced, and that is saying much, for some of the grandest Roses of the last decade have come to us from Newtownards, in the Emerald Isle. I have already indicated in a contribution to the *Gardeners' Chronicle* its truly marvellous capability of growth; it is also a profuse bloomer, and its flowers open with great facility. Another invaluable Rose for the garden,

nature of the soil. Atmospheric influences (which were not very favourable on the confines of the present season) have also much to do with plant deterioration and premature decay. I have already lost several precious introductions this year; such, for example, as Gertrude and Longworth Beauty; and assuredly it was not for lack of adequate attention. It was the theory of Wordsworth that every plant "enjoys the air it breathes;" but many Roses of recent origination have obviously not the vitality to enjoy it very long. Perhaps in many instances soil less highly fertilised, applied to their tender and sensitive roots, might have a different and more invigorating effect. The earliest of the Hybrid Teas this season have been Clara Watson, Caroline Testout, and Viscountess Folkestone, of which the last-mentioned is one of the most floriferous and

fragrant Roses within the range of my experience. It is, in my estimation, by far the most valuable creation of the late Mr. Henry Bennet, even if we take into consideration the merits of Mrs. John Laing, a Rose whose lilac-pink I do not wholly admire, and whose pendulous habit I cannot but deplore. Caroline Testout I have already had magnificent in dimensions, one imperial flower of this majestic variety, half-way up a venerable Apple-tree, being nearly 7 inches across. The majority of the Noisette Roses, and not a few of the dark-coloured Hybrid Perpetuals, such as Horace Vernet and Duke of Edinburgh, are not yet (July 3) in bloom; but they promise to be finer than usual this season. During the last week the most effective of the Tea Roses have been Souvenir d'un Ami, and its pure white derivative, Souvenir de S. A. Prince. The new Roses whose appearance I anticipate most eagerly are Frau Karl Druschki, Corona, Mr. Ben Cant, and Florence Pemberton. These are exceptionally vigorous growers, and cannot fail, wherever adequately cultivated, to produce very memorable floral and artistic effects. The flowers of such varieties as Mildred Grant and Alice Lindsell are unquestionably impressive, but they are unfortunately few. David R. Williamson.

ANOTHER POTATO DISEASE, "BLACK-LEG."

FROM a correspondent in North Hants we have received specimens of Potato haulms wilted and discoloured, with the intimation that "they look all right to-day, and to-morrow are dead." The lower part of the haulm, by the ground, is blackened, hence it has been called "Black-leg." The tubers are small and few. Close examination disclosed no fungus threads or spores, and the whole disease seemed involved in mystery, until we turned to the reports of the outbreak of a destructive disease in the United States, which has been attributed to *Rhizoctonia solani* (Kuhn). The first account of its occurrence was recorded in 1901, but it came under notice in Long Island in the summer of 1900, when Potato growers complained of wilting of the haulms, caused by a stem-rot. Afterwards, in thirty plantations, the threads of *Rhizoctonia* were found to be constantly present in the pith, and on the outside of the stems and roots.

In many sections large haulms gave promise of an abundant yield, but at digging time it was found that so few tubers had set that it would not pay to dig them. It was not uncommon for haulms to set an unusual number of small tubers, or "little Potatos" as they were called. These were often found in compact clusters, and so small as to be worthless. Another condition was the dying of the Potato plants.

The threads of the fungus are often found on the surface of the stems and tubers, where they give rise to irregular dark masses or nodules, known as sclerotia, which vary in size from that of a grain of sand to half an inch or more in diameter.

Plants when attacked whilst young, if not killed outright, are dwarfed, and usually die before the close of the season. In some cases the disease attacks the plant just below the surface of the ground, producing a stem rot which was at first called "collar rot" or "black ring." When the attacks are not so severe as to cause death, there is a conspicuous clustering of the branches or terminal leaf groups, and ultimately dying of the entire tops. In the specimens examined, the stems above ground showed discoloured areas of soft decay, whilst below the soil were numerous lesions in the form of brown dead areas. In those before us the base of the stem is blackened and dying.

There is still a great deal that is mysterious about this disease, since the plants may really be dying or dead, and yet exhibit neither threads nor

spores of fungi. It has been suggested that in the earlier stages the mischief is caused by bacteria, but of this there seems to be no positive evidence. It might be possible that the bacteriosis, attributed in some cases to *Bacillus solanacearum*, is implicated in this disease. The earliest indication of this latter disease is the sudden wilting of the leaves, which soon hang limp and shrivel up. This is followed by discoloration and collapse of the stem.

It is reported of the Black-leg disease that it is causing great ravages in Germany, and in some localities producing a loss of 75 per cent. in the crops, and investigations are still in progress to discover the causes and mitigate the effects of this new scourge.

Up to the present two forms of seed-treatment have been recommended—that of corrosive sublimate, which does not appear to prevent the disease to any appreciable degree; and the for-



FIG. 12.—EXHIBITION OF RAMBLER ROSES BY MR. M. H. WALSH AT THE MASSACHUSETTS HORTICULTURAL SOCIETY AT BOSTON, MARCH 24 TO 27, 1904. (SEE P. 24.)

malin seed treatment, which is stated to prevent the disease to a very marked extent. The formalin treatment is as follows: Add half a pint of formalin (40 per cent. strength) to 15 gallons of water; soak the seed tubers in it for two hours, then cut and plant.

It must be remembered that the soil in which diseased plants have been growing would not be a fit situation in which to plant seed Potatos, however much disinfected, until it is clearly ascertained that all germs of the disease have been killed out of the soil.

It may be noted that in one plant sent, which was thoroughly dead and in process of decay, a white mould was present in all its parts. The conidia were profuse, colourless, from subglobose to cylindrical (8μ diam. to $30 \times 8\mu$). There can be no suspicion that this is anything more than a saprophyte, which was flourishing on the decaying debris, and not in any way related to the disease. Nevertheless it is prudent to note any facts which may occur during investigations, whilst so much still remains obscure. M. C. C.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JUNE 28.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair), Messrs. Gordon, Massee, Chittenden, Worsdell, Shea, Saunders, and Douglas; Dr. M. C. Cooke, Sir D. Morris, K.C.M.G., Revs. W. Wilks and G. Henslow, Hon. Sec.

Vegetable Products of West Indies.—Sir D. MORRIS gave an interesting account of the cultivation and introduction into the English markets of new fruits now being raised. Thus, the Litchi has been brought fresh from Trinidad: its cultivation requires alternations of bright sunshine and water, so that its success depends upon artificial irrigation in the dry season. Mangos can now be also imported fresh, as well as much improved Smooth Cayenne Pine-apples, of the type grown in St. Michael's, the average price being 4s. Bananas, usually imported from Jamaica and Costa Rica, are now

received from Barbados. The fruit is of the dwarf species, *Musa Cavendishi*. They realise 4s. in England, the price at home of a bunch being 1s. They are packed in paper and cotton-wool, with the soft part of the leaves. The ship's hold being well ventilated, the moisture evaporates, and the fruit is thus kept cool and fresh. Immense quantities of large Onions are also grown; £84,000 worth were sent in a few weeks to New York. Cotton is also again being cultivated, the Barbadoes realising the highest prices.

Root Fungi in Orchards.—Dr. COOKE reported on samples received as follows:—"The specimens were pieces of bark of an Apple-tree, from near Bristol, permeated with mycelium. The fungus normally proceeds from decaying wood in the soil, as *Pholiota squarrosa*. There is no known method of saving the trees (see *Journal of the Royal Horticultural Society*, xxvii.; p. 32, 1903). If the roots are only slightly attacked, they may be cleaned and pruned, then washed with some fungicide. Infected trees in an orchard should be trenched round, the soil cast up, sterilised, and all old wood burnt. All toadstools in orchards should be thoroughly destroyed in the young state."

Diseased Tomatos.—Plants received from Berwick-upon-Tweed were examined by Dr. COOKE, who

observes: "The symptoms appear to be those of the 'Tomato Wilt,' a kind of bacteriosis to which Potatoes are also liable (see *Journal of the Royal Horticultural Society*, xxvii., 1893, p. 819). Diseased plants should be removed, as they are liable to infect others. There should afterwards be a change of crops on the ground. Nothing will cure the infected plants."

Rose - leaf Black Blotch. — Dr. COOKE described diseased leaves, sent from Bicester, as follows: "The blotch on Rose-leaves is a most common disease on Roses of all kinds, and is caused by a fungus named

powder of flowers-of-sulphur, mixed with a little lime. If it does not check the disease, then spray with solution of sulphate of iron. Let sulphur have the first chance."

Pears attacked by Midges. — Mr. SAUNDERS reported as follows upon samples received from Newtown: "The Pears are attacked by the 'Pear midge' (*Diplosis pyri-vora*), or rather by its grubs [see *Gardeners' Chronicle*, June 25, 1904, p. 412]. The parent insect, which is a small two-winged fly, lays its eggs in the blossoms as soon as they are sufficiently open for it to be able to do so;

the trees. Perhaps a more certain method of obtaining the same end is, during the winter, when there is not much work to be done, to remove the soil to the depth of 2 inches, and burn, bury, or scatter it, so that the birds can pick out the little chrysalids formed by the grubs; fresh earth should be used to replace that which was taken away."

THE NATIONAL ROSE.

METROPOLITAN EXHIBITION.

JULY 6.—The National Rose Society held its annual exhibition in the Gardens of the Inner Temple, Thames Embankment, London, on Wednesday last in delightful weather. The show was one of the best ever held by the Society, and the quality of the Roses was unusually high. The year 1904 will come to be known as one in which there was a hountiful display of Roses, as may be seen by driving along the country lanes at the present time, and noting the lavish displays in the cottage gardens.

Two Gold Medals were awarded to new varieties, and two other varieties were commended. The arrangements were very good, owing to the energy and courtesy of Mr. Ed. Mawley, honorary secretary, assisted by Mr. Wright, Mr. Reader, and other officers of the Royal Horticultural Society, who lent their aid to the daughter society.

NURSERYMEN.

(MIXED ROSES.)

The Champion Trophy and Gold Medal of the Society accompanied the 1st prize for seventy-two blooms, distinct varieties, and they were won by Messrs. R. HARKNESS & Co., Hitchin, who had one of the most magnificent collections of flowers ever shown in this class. The varieties were as follows:—*Back Row:* Her Majesty, Prince Arthur, Mrs. John Laing, Countess of Oxford, Florence Pemberton, Dr. Andry, Bessie Brown, Captain Hayward, Mildred Grant, Marquise Litta, Marchioness of Londonderry, Rev. Alan Cheales, Mrs. W. J. Grant, Gustave Piganneau, Eugénie Verdier, Ulrich Brunner, Caroline Testout, Madame Hausemann, Danmark, Gladys Harkness, Mrs. Ed. Mawley, Alfred Colomb, Lady M. Beauchere, and Etienne Levet. *Centre Row:* Le Havre, Frau Peter Lambert, Duchess of Bedford, Medea, Earl of Dufferin, Maréchal Niel, Duke of Wellington, Alice Lindsell, Madame Delville, Princess Beatrice, Horace Vernet, Comtesse de Nadaillac, Comte de Rainbaud, Maman Cochet, Marie Rady, Mrs. Sandford, Suzanne-Marie Rodocanachi, Frau Karl Druschki, A. K. Williams, White Maman Cochet, Duke of Edinburgh, Muriel Grahame, Grand Mogul, and La France of '99. *Front Row:* Lady M. Fitzwilliam, Oscar Cordel, Ulster, Charles Darwin, K. A. Victoria, Comtesse de Ludre, Madame Gabrielle Luizet, John Stuart Mill, Ernest Metz, Duke of Teek, Duchess of Portland, Sir Rowland Hill, Souvenir d'Elise Vardon, Marie Baumann, Marie Verdier, Fisher Holmes, Comtesse de Caledon, Pierre Notting, Souvenir de S. A. Prince, Exposition de Brie, Killarney, Louis Van Houtte, The Bride, Dupuy Jamain. We have not attempted to particularise the best blooms in this exhibit, for all were excellent. The 2nd prize was won by Messrs. B. R. CANT & SONS, The Old Rose Nurseries, Colchester, and here again there were some very fine flowers, the collection being better than many collections that in previous years have won the premier position. The varieties Maman Cochet, Mildred Grant, Mrs. W. J. Grant, Mrs. Edward Mawley, Medea, and others were capital. 3rd, Messrs. FRANK CANT & Co., Braiswick Nurseries, Colchester, whose collection contained the best bloom of a hybrid Tea variety shown in the Nurserymen's classes. There were four competitors in this class this year, as against five last year.

Forty distinct varieties, three blooms of each.—This class, as usual, made a very brilliant show, and the 1st prize collection, exhibited by Messrs. A. DICKSON & SONS, Ltd., Newtownards, Ireland, was particularly attractive. Their collection included the best Roses other than Hybrid Tea, Tea, or Noisette exhibited in the Nurserymen's classes. Some of the more conspicuous of the trebles were the varieties Dean Hole, Suzanne Marie Rodocanachi, Bessie Brown, Caroline Testout, Mrs. W. J. Grant, Marquise Litta, Marchioness of Dufferin, Frau Karl Druschki, &c. Messrs. B. R. CANT & SONS were 2nd; and Messrs. F. CANT & Co., 3rd.



FIG. 13.—NEW RAMBLER ROSE "LADY GAY": COLOUR OF FLOWERS CHERRY-PINK.
(SEE P. 24.)

Actionema Rosae (see *Journal of the Royal Horticultural Society*, xxvii., 1902, p. 42, pl. iii., fig. 50). It may be mitigated by spraying, but, as yet, has not been effectually cured. All fallen diseased leaves should be burnt, in order to prevent infection of healthy leaves. The diluted copper sulphate solutions are usually employed. They should be applied early, and when the leaves are young, and but little trace of the disease is seen."

Grape Vine Anthracnose (Glauosporium). — Dr. COOKE reports as follows upon diseased fruit received from Wiltshire: "The disease on the berries is in a very young state, so that there are no conidia at present, and it may succumb to treatment. The use of rich stable manure tends to increase the disease, or render the Vines liable to attack. Try dusting with

the grubs are soon hatched, and at once make their way into the centre of the embryo fruit, which they very soon destroy. There does not appear to be any way of effectually dealing with the fly, or preventing them laying their eggs in the blossoms. Trees which are in a position and of a size that the fruit can be easily examined should be carefully looked over, and any that are found to be becoming distorted, or showing signs of the characteristic black markings, should be gathered and burnt; any Pears that fall prematurely should also be collected and destroyed. In the course of next month the ground under the infested trees should be given a good dressing of kainit (not less than half a ton to the acre); this will have the effect of killing the grubs which have left the Pears and have buried themselves in the soil beneath

Forty-eight blooms, distinct varieties.—The 1st prize in this class (from which exhibitors in the larger classes were excluded) was won by Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge. This firm showed the following varieties:—*Back Row:* Gustave Piganneau, La France, Horace Vernet, Mrs. W. J. Grant, Abel Carrière, Lady Clanmorris, Star of Waltham, Gladys Harkness, Maman Cochet, Marie Baumann, Duchess of Portland, Dupuy Jamain, Mildred Grant, Captain Hayward, and Papa Lambert. *Centre Row:* Bridesmaid, Dr. Sewell, White Maman Cochet, Dr. Andry, Mrs. John Laing, Mme. Charles Crapelet, Bessie Brown, Jean Souper, Alice Lindsell, Chas. Lefebvre, Frau Karl Druschki, Alfred Colomb, Muriel Grahame, Sultan of Zanzibar, John Ruskin, and Fisher Holmes. *Front Row:* John Stewart Mill, Mme. Cadeau Ramey, Ben Cant, Ethel Brownlow, Victor Hugo, K. A. Victoria, Marie Verdier, Comtesse de Nadaillac, Lady M. Beaulere, Souvenir de Pierre Notting, Earl of Dufferin, Marchioness of Londonderry, The Bride, Hélène Guillot, and Ulster. The 2nd prize was won by Messrs. G. & W. H. BURCH, Peterborough. There were excellent blooms of Her Majesty, Countess of Caledon, White Lady, Mamie, Mildred Grahame, &c. 3rd, Messrs. JOHN JEFFERIES & SON, Cirencester. There were four collections in this class.

Twenty-four blooms, distinct varieties.—Mr. GEORGE PRINCE, Longworth Nurseries, Faringdon, showed a truly magnificent collection of flowers in this class and obtained 1st prize. He had the following varieties: *Back Row:* White Maman Cochet (Silver Medal bloom), Ulrich Brunner, Mildred Grant (extra good), Marchioness of Dufferin, Frau Karl Druschki, Prince Arthur, Souvenir de Pierre Notting, and Mrs. Ed. Mawley (extra large size). *Centre Row:* Ulster, Florence Pemberton, Captain Hayward, Comtesse de Nadaillac, Louis Van Houtte, Kaiserin Augusta Victoria, Killarney, and Bessie Brown. *Front Row:* Muriel Grahame, Gustave Piganneau, Bridesmaid, Mrs. W. J. Grant, Souvenir de S. A. Prince, Caroline Testout, Souvenir d'Elise Vardon, and Marquise Litta. 2nd, Mr. CHAS. TURNER, Royal Nurseries, Slough, who had a very fine collection, in which the varieties Bridesmaid, Ulrich Brunner, Ellen Drew, and Mme. Jules Graveaux were particularly good. 3rd, Mr. JOHN MATTOCK, New Headington Nurseries, Oxford. The collection included a prodigious bloom of Mrs. Ed. Mawley, which had it opened more kindly would have been an exceedingly remarkable flower. There were eight exhibitors in this class.

TEAS AND NOISETTES.

The principal class for Teas and Noisettes was that for *twenty-four blooms, distinct varieties*. Mr. GEORGE PRINCE, Longworth Nurseries, Faringdon, was 1st with a fine display. Souvenir de Pierre Notting, White Maman Cochet, Catherine Mermet, Bridesmaid, Maman Cochet, all especially meritorious; also grand blooms of Ernest Metz, Mrs. Edward Mawley, Souvenir de S. A. Prince, Comtesse de Nadaillac, Innocente Pirola, Cleopatra, Maréchal Niel, Souvenir d'un Ami, The Bride, Souvenir d'Elise Vardon, Golden Gate, Empress of Russia, Marie Van Houtte, Hon. Edith Gifford, Madame de Watteville, and Cornelia Koeh. The 2nd prize was won by Messrs. B. CANT & SONS, Colchester; the varieties Maman Cochet, Madame Cusin, and Muriel Grahame being especially good. Messrs. FRANK CANT & Co., Colchester, were 3rd.

Twelve blooms, distinct varieties.—1st prize was awarded to Messrs. J. BURRELL & Co., Cambridge, who showed the following varieties: Mrs. Edward Mawley, Comtesse de Nadaillac, White Maman Cochet, Boadicea, The Bride, Souvenir de Pierre Notting, Muriel Grahame, Ethel Brownlow, Souvenir de Elise Vardon, Innocente Pirola, Maman Cochet, and Bridesmaid. The 2nd prize was awarded to Mr. JOHN MATTOCK, New Headington, Oxford, whose exhibit must have run very close in the competition for 1st honours. The varieties Mrs. Edward Mawley, White Maman Cochet, Étoile de Lyon, and Comtesse de Nadaillac, were shown in perfection. Messrs. JOHN JEFFERIES & SON, Cirencester, were 3rd.

ROSES IN VASES.

The Society increases the encouragement given to the showing of Roses in vases from year to year. The long stems and foliage, together with the more graceful pose of the blooms, afford a much better effect than can be obtained from blooms shown in boxes.

Twenty distinct varieties, three blooms of each.—The flowers in this class being shown in vases, had a very fine effect; each vase contained three blooms of one variety. The 1st prize was won by Mr. CHAS. TURNER.

The varieties that appeared to best advantage included Maman Cochet, Frau Karl Druschki, Mrs. John Laing, Tom Wood, Ulrich Brunner, and K. A. Victoria. 2nd, Messrs. GEO. COOLING & SONS, Bath, who had a very good collection; and 3rd, Mr. GEO. MOUNT, Canterbury.

Class 8, for fourteen distinct varieties displayed in three in vases, brought some charming exhibits, although the group set up by Mr. GEO. PRINCE, Longworth, Faringdon, was an easy 1st. Every flower in this handsome collection was good. Mrs. Ed. Mawley, Madame de Watteville, Comtesse de Nadaillac, and Maman Cochet being especially noteworthy. Messrs. FRANK CANT & Co., Colchester, were 2nd; and Mr. JOHN MATTOCK, New Headington, 3rd.

Twelve distinct varieties, seven blooms of each.—Not more than six varieties of Teas or Noisettes were to be included. This Class brought many competitors, the whole exhibits being of high standard throughout, and keen competition ensued for the premier places, the 1st of which fell to Messrs. F. CANT & Co., Braiswick, Colchester. Effectively displayed in taller vases at the back, with perfect flowers on strong growths, carrying the blooms well above, this group was much admired. Mrs. E. Mawley, Fisher Holmes, Killarney, Mildred Grant, Kaiserin Augusta Victoria, Captain Hayward, Mrs. W. J. Grant, Mrs. Crawford, Gladys Harkness, Bessie Brown, Marquise Litta, Frau Karl Druschki, all were in the pink of condition and hard to be surpassed. The 2nd prize group, staged by Messrs. ALEX. DICKSON & SON, was also meritorious; 3rd, Mr. GEO. MOUNT, The Rose Nurseries, Canterbury.

Nine distinct varieties of Teas and Noisettes, seven blooms of each.—Mr. GEO. PRINCE's group won 1st prize in this class, staged on a dark table ground, the vases carrying blooms of high quality, of which Mrs. Mawley, White Maman Cochet, Madame de Watteville, and Muriel Grahame were some of the finer displayed. Mr. GEO. MOUNT, Canterbury, was 2nd, with some pleasing vases of blooms, the variety Mrs. E. Mawley being especially prominent. Mr. JOHN MATTOCK, Oxford, was 3rd.

GARDEN OR DECORATIVE ROSES.

This interesting section was well represented, and occupied the major portion of the centre of one of the long tents near the entrance. These were especially displayed in such a manner as to show the foliage and habit of growth of each variety exhibited, and very charming was the result, forming an object-lesson as to the lovely and numerous varieties of this popular class of Roses.

For thirty-six distinct varieties two growers competed—Mr. JOHN MATTOCK, Oxford, and Messrs. PAUL & SON, Cheshunt, the 1st and 2nd prizes being awarded in the order named. The quality of the flowers in Mr. MATTOCK's group was superb, and the individual bunches in the various vases would have done justice to any bride for a bouquet. Marquis of Salisbury and Souvenir de Catherine Guillot were especially fine, although it was difficult to discriminate among a group of such high standard.

Eighteen distinct varieties.—The 1st prize was awarded to Mr. GEO. PRINCE, Oxford, among whose group were several pillar varieties. Mme. A. Chateau was shown well; Marquis of Salisbury was of a fine colour. The 2nd prize in this class fell to Mr. CHAS. TURNER, Slough, whose Crimson Damask and Lady Curzon, both large single varieties, were shown in fine order. 3rd, Mr. GEO. MOUNT, Canterbury.

Eighteen distinct varieties of Summer-flowering Roses (Hybrid Perpetuals, Hybrid Teas, Teas, and China Roses not admissible). There were five exhibitors, who presented some favourable displays. Messrs. GEO. COOLING & SONS, Bath, were placed 1st, with chiefly climbing and Provence varieties. Una, a beautiful large white single variety, was conspicuous, the bud-stage being especially delightful; Madame d'Arbly was also shown well in this group. The 2nd prize group, shown by Mr. CHAS. TURNER, Slough, was also a very fine collection; Messrs. PAUL & SON, Cheshunt, were 3rd.

ROSES IN POTS.

Messrs. PAUL & SON, Cheshunt, were awarded a Silver-gilt medal for a group of Roses in pots, illustrating the value of these plants for bedding purposes. The plants were in 8-inch pots and grown about 1½ to 2 feet in height. They were well-flowered, being principally Tea and hybrid-Tea varieties with a few hybrid perpetuals. Three trained standard plants of Wichuriana varieties gave a pleasing relief to the group.

MEDAL ROSES.

The Society's Gold Medals for premier blooms shown by nurserymen were awarded as follows: for the best Hybrid Tea Rose, Mildred Grant, shown by Messrs. F. CANT & Co.; the best Tea or Noisette, White Maman Cochet, shown by Mr. GEO. PRINCE; and the best other than Hybrid Tea, Tea, or Noisette, Ulster, shown by Messrs. ALEX. DICKSON & SONS.

OPEN CLASSES.

For twelve distinct varieties of hybrid Teas, Messrs. A. DICKSON & SONS, LTD., Newtownards, were placed 1st with twelve meritorious flowers, including White Lady, Alice Lindsell, Bessie Brown, Mildred Grant, Lady Clanmorris, Marquise Litta, Kaiserin Augusta Victoria, Killarney, Mrs. David McKee, Mrs. W. J. Grant, Lady Mary Fitzwilliam, and Caroline Testout. Messrs. B. CANT & SONS, Colchester, were 2nd, Mildred Grant being especially fine. Messrs. PAUL & SON, Cheshunt, and Messrs. FRANK CANT & Co., Colchester, were equal 3rd.

Twelve white or yellow Roses of any type.—These charming flowers were displayed in vases, according to the conditions of the schedule. White flowers predominated, especially the variety Frau Karl Druschki, which variety, shown by Messrs. FRANK CANT & Co., Colchester, won the premier honour. The KING'S ACRE NURSERIES, LTD., Hereford, and Messrs. B. CANT & SONS, Colchester, were 2nd and 3rd respectively with the same variety as won the 1st prize.

Twelve blooms of any other variety than white or yellow, to be displayed in a single vase, brought some magnificent flowers, all of favourite varieties, such as Mildred Grant and Mrs. E. Mawley. The latter variety, shown by Messrs. FRANK CANT & Co., Colchester, was awarded 1st prize; Messrs. B. CANT & Co., 2nd, with Mrs. E. Mawley; KING'S ACRE NURSERIES, LTD., Hereford, with Mildred Grant, 3rd.

NEW ROSES.

The Society's GOLD MEDAL was awarded in two instances to new varieties that have not been previously exhibited. One of these was named Dean Hole, and was shown by Messrs. ALEX. DICKSON & SONS. It is presumably a Hybrid Tea, and somewhat resembles in colour and form the variety Mrs. Mawley, but the colour is rather richer and the form a little better.

The other variety awarded a Gold Medal was named Mrs. O. G. Orpen, and was shown by Mr. O. G. ORPEN. It is a climbing Damask Rose, with single flowers of a rich shade of pink colour, 4 to 5 inches in diameter. It is a strong grower, and has large, vigorous-looking foliage. The variety would be especially suitable for cultivation against a pillar.

CARDS OF COMMENDATION

were awarded to the two varieties following:—Irish Harmony, shown by Messrs. A. DICKSON & SONS, a single Rose of pale cream colour, some 6 inches or more in diameter, the orange-coloured anthers having a good effect. It is said to form a magnificent bush. The foliage is bright and very smooth. Lady Betty, also exhibited by Messrs. A. DICKSON & SONS, is of the Hybrid Tea class; the petals are reddish-rose on the exterior, and bronze or buff-coloured inside.

New Roses since 1901, issued by nurserymen of the British Isles, were represented by some exquisite specimens, showing the great advance made in these lovely flowers in such a short period. Mildred Grant was again in the foremost position. The box containing the prize group, shown by Messrs. B. CANT & SONS, Colchester, contained Mamie, Mildred Grant, Robert Scott, Frau Karl Druschki, Hélène Guillot, Jean Batnatois, Apotheker G. Hofer, Alice Lindsell, Florence Pemberton, Lady Moyra Beaulier, Ben Cant, and Edith D'Ombrian.

For nine blooms of any new Roses, the variety Mildred Grant was again to the fore, Messrs. F. CANT & Co., Colchester, being placed 1st with that variety; 2nd, Messrs. DICKSON & SONS, LTD., Newtownards, with the same variety; 3rd, Messrs. B. CANT & SONS, Colchester, with Frau Karl Druschki.

The Challenge Cup offered for twelve vases of New Seedling Roses or distinct sports, in not fewer than six varieties, was won by Messrs. A. DICKSON & SON, LTD., Newtownards. Lady Derby is a handsome blush flower on a cream ground, of exquisite shape, with a good centre. Lady Barham is another good variety with strong growth. Lady Betty is cream-blush coloured. Harry Kirk is perhaps the finest in the group; it is a cream Hybrid Tea, with flowers of good substance and a

pleasing form. It has the appearance of being a robust grower. The variety Mrs. John Bateman also deserves mention.

DECORATIVE CLASSES.

The decorated arches in Class 24 found many admirers among the visitors, several well-trained arches of climbing Roses being presented. That shown by Messrs. PAUL & SON, Cheshunt, was literally covered with flowers, the varieties Wallflower and Leuchtstern being trained on either side of the Bamboo arch, the former variety having large clusters of semi-double flowers on long axillary shoots, quite the handsomest variety shown in this manner. Mr. GEO. PRINCE was 2nd with varieties Leuchtstern and The Garland; Mr. CHAS. TURNER, Slough, 3rd, with superb specimens of Crimson Rambler.

In the section for *button-hole Roses*, shown in vases of nine distinct varieties, Mr. JOHN MATTOCK, Oxford, won the 1st prize with charming little flowers, contrasting sharply in size with some of the members in other classes, yet perfect in shape and of exquisite colours. Mr. PRINCE, Oxford, was 2nd; and Mr. GEO. MOUNT, Canterbury, 3rd.

The *single Roses* are all charming, and when seen in clusters, such as prevail in Leuchtstern, they are delicious. The gorgeous flowers of Rugosa, and such varieties as The Lion, are not lacking in size, and are as striking and brilliant as Poppies. For twelve distinct varieties of this type, Messrs. FRANK CANT & Co., Colchester, were 1st with, among others, Rugosa rubra, Irish Modesty, macrantha, and himalaica. Mr. JOHN MATTOCK, Oxford, was 2nd; Messrs. PAUL & SON, Cheshunt, 3rd.

The class for *three sprays of Roses, suitable for ladies' wear*, with any foliage or grasses, brought five competitors. Mrs. O. G. ORPEN, Colchester, was placed 1st, her design being light and graceful, tiny pillar Roses being used with Maidenhair Fern and Asparagus foliage. Mr. JOHN MATTOCK, Oxford, was 2nd, his design having only Rose foliage and tiny polyantha Roses. Miss J. B. LANGTON, Hendon, was 3rd.

AMATEUR SECTION.

CHAMPION TROPHY CLASS.

Thirty-six blooms, distinct varieties. In this, the leading class, six exhibitors competed, the 1st prize going to E. B. LINDSELL, Esq., Hitchin, whose blooms were of large size, clean, and of perfect shape, and comprised the following varieties:—Bessie Brown, Ulrich Brunner, Alice Lindsell, Marquise Litta, Caroline Testout, Gustave Piganneau, Ulster, Alfred Colomb (very fine), Mildred Grant, S. M. Rodocanachi, Frau Karl Druschki, F. Michelon, Mrs. J. Cocker, A. K. Williams, Bridesmaid, Louis Van Houtte, White Maman Cochet, Mme. Hausmann, La France, Duke of Wellington, Comtesse de Nadaillac, Horace Vernet, Souvenir d'Elise Vardon, Comte Raimbaud, Her Majesty, Beauty of Waltham, Madame E. Verdier, M. Baumann, Duchess of Portland, Marie Verdier, K. A. Victoria, Mrs. J. Laing, Medea, Fisher Holmes, Mrs. Grant, and Marchioness of Londonderry. The 2nd prize went to a Gloucester grower, CONWAY JONES, Esq.; Mrs. E. Mawley and Mildred Grant being extra fine on this stand. 3rd, The Rev. J. H. PEMBERTON, Havering-atte-Bower.

Twenty-four blooms, distinct.—This class was an extra one open to all amateurs who had not previously won either the Champion Trophy or the 1st prize in this class, and of five competitors the leading place was secured by F. DENNISON, Esq., Birmingham, with a stand of large and well-coloured blooms; 2nd, M. WHITTLE, Esq., Belgrave, Leicester; 3rd, CONWAY JONES, Esq.

Twenty-four blooms, distinct varieties (open to all amateurs).—Five exhibitors again competed, the 1st prize going to E. B. LINDSELL, Esq., his blooms being very clear and bright—Maman Cochet, Bessie Brown, and Mrs. Mawley were among the best; 2nd, Rev. J. H. PEMBERTON; 3rd, O. G. ORPEN, Esq., Colchester.

Twelve distinct varieties (triples).—In this class E. B. LINDSELL, Esq., was again 1st with some magnificent blooms, the variety Frau Karl Druschki in this stand being also awarded the Silver Medal for the best Rose other than a Hybrid Tea, Tea, or Noisette; the blooms of Mildred Grant and Alfred Colomb in this stand were also very fine. F. DENNISON, Esq., was 2nd; 3rd, CONWAY JONES, Esq.

For nine blooms of any Rose except Tea or Noisette.—These were shown in a single vase. Mr. LINDSELL was again 1st with Alice Lindsell; 2nd, H. V. MACHIN, Esq.; 3rd, Rev. J. H. PEMBERTON.

THE TWO FOLLOWING CLASSES WERE OPEN ONLY TO GROWERS OF FEWER THAN 2,000 PLANTS.

Twenty-four blooms, distinct.—1st, E. M. EVERS-FIELD, Esq., Horsham; Comte de Raimbaud in this stand was very fine, and the bloom of Mildred Grant was awarded the Silver Medal for the best hybrid Tea. 2nd, A. SLAUGHTER, Esq., Steyning, Sussex; 3rd, R. F. HOBBS, Esq., Worcester. Seven exhibitors competed.

Eight distinct varieties, three blooms of each.—R. F. HOBBS, Esq., was 1st with a good stand, the variety Mildred Grant being very fine. 2nd, E. M. EVERS-FIELD, Esq.; 3rd, A. SLAUGHTER, Esq.

THE FOLLOWING CLASSES WERE OPEN ONLY TO GROWERS OF FEWER THAN 1,000 PLANTS.

Twelve distinct varieties.—The competition in this class was very keen, nineteen good stands being in competition. The 1st prize was awarded to C. F. H. LESLIE, Esq., Hertingfordbury, for a very fine stand of blooms; 2nd, C. PAGE, Esq., Enfield; 3rd, A. E. FARNDEN, Esq., Sutton, Surrey.

For Five Blooms of any Rose, except Tea or Noisette.—These were shown in a single vase, and there were sixteen exhibits, the 1st prize going to G. MOYLES, Esq., Hitchin, for the variety Mildred Grant; 2nd, C. PAGE, Esq.; 3rd, G. A. HAMMOND, Esq.

OPEN TO GROWERS OF FEWER THAN 500 PLANTS.

Nine blooms, distinct varieties.—Twenty-two stands were in competition, the 1st prize going to WILLIAM UPTON, Esq., Belgrave, Leicester; 2nd, R. W. BOWYER, Esq., Hertford Heath. Only six competed with six blooms, the 1st prize going to K. H. GIFFORD, Esq., Edensor, Surrey. For five blooms in a vase, sixteen competed, the first prize going to A. C. TURNER, Esq., Edgware, for the variety Frau Karl Druschki; 2nd, R. W. BOWYER, Esq.

OPEN ONLY TO GROWERS OF FEWER THAN 200 PLANTS.

Twelve exhibitors staged stands of six blooms. 1st., W. R. HAMMOND, Esq., Burgess Hill; 2nd., F. J. NIGHTINGALE, Esq., Sutton.

Seven other extra classes were provided for amateurs, that for twelve blooms being open only to those who had not previously won the Pamsy Cup. Eight exhibitors staged, the 1st prize going to M. WHITTLE, Esq., Leicester.

In the Maiden classes for six blooms. F. SPENCER, Esq., Harrow, was 1st as an exhibitor who had never previously exhibited at the National Rose Society's shows.

E. P. SUGDEN, Esq., was 1st in the class for exhibitors who had not previously won a 1st prize; and E. R. SMITH, Esq., Muswell Hill, N., 1st as an exhibitor growing within eight miles of Charing Cross. Twenty-four exhibitors competed in the first-mentioned Maiden class.

R. F. HOBBS, Esq., was 1st for six blooms of new Roses, the best being Alice Lindsell and Mildred Grant.

TEA AND NOISETTE SECTION.

(TROPHY CLASS.)

Eighteen distinct varieties.—Six stands were in competition, the 1st place being won by A. H. GRAY, Esq., Bath, who therefore won the Challenge Trophy; 2nd, O. G. ORPEN, Esq.; 3rd, CONWAY JONES, Esq. The best blooms in Mr. GRAY's stand were Mrs. E. Mawley, White Maman Cochet, Bridesmaid, and Maman Cochet.

The last-mentioned exhibitor was also 1st in the next class, that for eighteen blooms, distinct, open to amateurs, irrespective of number of blooms grown; 2nd, ALFRED TATE, Esq., Leatherhead; 3rd, Rev. F. R. BURNSIDE.

Eight distinct varieties, three blooms of each.—Five exhibitors staged in this class, Mr. GRAY being again the leading competitor, followed by C. JONES, Esq., and the Rev. F. R. BURNSIDE. Mrs. E. Mawley, Comtesse de Nadaillac, Maman Cochet, and White Maman Cochet were the best varieties in each stand. Mr. GRAY was 1st for a vase of seven blooms of one variety with Mrs. E. Mawley.

OPEN TO GROWERS OF FEWER THAN 500 PLANTS.

Twelve blooms, distinct varieties.—Among eight competitors, all staging excellent blooms, the 1st prize was won by R. F. HOBBS, Esq.; 2nd, J. WAKERLEY, Esq., Rainham; 3rd, M. WHITTLE, Esq.

OPEN TO GROWERS OF FEWER THAN 200 PLANTS.

In the Class for nine varieties, nine exhibitors competed, the 1st prize going to Dr. PALLETT, Earl's

Colne, Essex; 2nd, G. H. BAXTER, Esq., Brentwood; 3rd, G. MOYLES, Esq.

R. W. BOWYER, Esq., was 1st for six blooms distinct; 2nd, A. C. TURNER, Esq., Edgware, among thirteen competitors. An extra class in this division for four varieties, three blooms of each, brought ten competitors, the 1st prize going to A. SLAUGHTER, Esq.; 2nd, G. H. BAXTER, Esq.

EXHIBITION ROSES IN VASES.

Quality of the blooms was the first consideration with the judges.

For nine distinct varieties, five blooms in each vase, there were but two exhibitors, the 1st prize going to A. H. GRAY, Esq.; 2nd, H. V. MACHIN, Esq., Workop.

Six distinct varieties, seven blooms of each.—In this class there was the same number of competitors, Mr. GRAY being again 1st; 2nd, Miss B. LANGTON, Hendon, N.W.

For five distinct varieties, five blooms of each, two only to be of Teas or Noisettes, four exhibitors competed, the 1st prize going to E. R. SMITH, Esq., Muswell Hill, N., for a very bright exhibit, the best being Ulrich Brunner, Caroline Testout, and Mildred Grant. 2nd, Miss LANGTON.

DECORATIVE SECTION—LADIES.

In these classes style and arrangement were the first considerations with the Judges.

Class 64 was for a decoration of cut Roses for dinner-table, arranged with any cut foliage, Ferns, or grasses, space allowed 8 feet by 6 feet. There were eight competitors, and the 1st prize was awarded to Miss J. B. LANGTON, Hendon, for a very pretty arrangement of the blush Rosa macrantha with trails of Asparagus Sprengeri and Adiantum cuneatum set up in low vases. Mrs. O. G. ORPEN was 2nd; 3rd, Miss D. M. OLIVER, Tollington Park.

For a Bowl of Roses, lightly arranged with Rose foliage only, ten competed, the 1st prize going to Mrs. O. G. ORPEN; 2nd, Miss J. B. LANGTON.

A Vase of Roses, arranged with any foliage.—Mrs. H. E. MOLYNEUX was 1st; 2nd, Miss LANGTON. Ten competed.

Baskets of Cut Roses.—From nine other exhibitors, the 1st award was won by Mrs. G. LEWIS, Watford; 2nd, Mrs. ORPEN.

GARDEN OR DECORATIVE ROSES.

The leading class in this section was for—

Eighteen distinct varieties, not fewer than three trusses of each, space not to exceed 8 feet by 3 feet.—Here Mr. Menze, gr. to A. TATE, Esq., Leatherhead, was a very easy 1st, with a very fine collection, well set up. The varieties were Reine Olga de Wurtemberg, Alistair Stella Gray, Boule de Neige, Bardon Job, Augustine Guinoisseau, Rêve d'Or, Marquise Balbrano, Gloire Lyonnaise, W. A. Richardson, Lady White, Marquis of Salisbury, Hebe's Lip, Perle d'Or, Wallflower, graefilis, Anne Marie de Montravail, Eugénie Lamesch, and Gloire de Rosamène. 2nd, Rev. J. H. PEMBERTON; 3rd, H. V. MACHIN, Esq.

For twelve distinct varieties, Mrs. A. F. PERKINS, Hohnwood, Surrey, was 1st; 2nd, Miss B. H. LANGTON; 3rd, J. B. FORTESCUE, Dropmore. There were four competitors in each of the two preceding classes.

Six bunches of distinct varieties.—There were eight exhibitors, the 1st prize going to C. GORDON CLARK, Esq., Leatherhead. Five exhibitors staged six vases of Sweet Briar Roses, the 1st prize going to Mrs. E. HORNE, Reigate; 2nd, Lady SUTTON BENHAM, Newbury. The 1st prize varieties were Lucy Ashton, Rosa Bradwardine, Anne of Gierstein, Any Robsart, Brenda, and Meg Merrilies.

With six distinct varieties, suitable for Buttonholes, ALFRED EVANS, Esq., was 1st with Ma Capucine, Marie Van Houtte, Mine. Hoste, Anna Olivier, Rubens, and Mme. Pernet Ducher; 2nd, C. CLARK, Esq.

Five distinct varieties of Decorative Roses (three sprays of each arranged to show the decorative value of the varieties). 1st, Mrs. A. F. PERKINS, with Celestial, Marquis of Salisbury, Wallflower, and Claire Jacquier; as the best; 2nd, Miss LANGTON; 3rd, L. MCKENNA, Esq., Twyford. Six competed.

MEDAL ROSES.

The Society's Gold Medals to the premier blooms in the Amateurs' Classes were awarded as follows:—For the best Hybrid Tea Rose, Mildred Grant, shown

by E. M. EVERSFIELD, Esq., Horsham; the best Tea or Noisette, White Maman Cochet, exhibited by the Rev. F. R. BURNSIDE; best Rose other than Hybrid Tea, Tea, or Noisette, Frau Karl Druschki, exhibited by Mr. LINDSELL in the class for twelve trebles.

ROYAL BOTANIC.

JULY 6.—The most important exhibit came from Messrs. BARR & SONS, King Street, Covent Garden, who staged a large and varied collection of hardy flowers (Gold Medal).

Messrs. J. PEED & SONS, West Norwood, staged a fine group of Caladiums, among which were noted H. J. Chapman, soft pink with bright ribs; Mrs. John Peed, red, with darker centre and narrow green margin; Silver Queen, good white; La Lorraine, deep red; Fastuosum, and other good varieties (Gold Medal).

Lady ALICE DUNDAS, of Middleton Lodge, Yorkshire, showed some good blooms of Malmaison Carnations, the variety Princess of Wales being very bright in colour (Cultural Commendation). Mr. W. BAYLOR HARTLAND, of Cork, Ireland, sent Galega Hartlandi variegata.

Mr. Sicklemore, gr. to Dr. BOXALL, staged fifty varieties of Sweet Peas, having good bunches of well developed blooms (Silver Medal).

Miss ADAMSON, South Villa, Regent's Park (gr., Mr. G. Kelf), showed good fruits of Dr. Hogg Peach and three varieties of Melons, including "Regent's Park," a netted variety with scarlet flesh, for which a Certificate of Merit was awarded (Silver Medal).

Messrs. LAXTON BROTHERS, of Bedford, showed Strawberries.

Mr. J. P. HARVEY, of Kidderminster, sent samples of a new fertiliser, the result of using which Mr. A. COOMBS showed good Strawberries, Tomatos, Cucumbers, and Ferns.

HANLEY HORTICULTURAL FETE.

July 6, 7.—The annual horticultural show at Hanley (Staffs) was opened on Wednesday last, and proved to be one of the most successful yet held in this town, which is surrounded by a very large population. The weather having been extremely good, it is believed the attendance will prove to be greater than on any similar occasion. The arrangements were in the hands of Mr. Jos. Kent, Secretary, and the show is given the support of the county borough authorities. We can only refer to a few of the principal classes.

Group of plants arranged for effect, in or out of bloom, not to exceed 300 square feet: the 1st and special prize was won by Messrs. CYPHER & SONS, Cheltenham; 2nd and special, Messrs. ARTINDALE & SON, Sheffield; 3rd, Mr. WM. VAUSE, Leamington.

The best group of Orchids in bloom, arranged for effect, not to exceed 100 square feet: was shown by the Duke of SUTHERLAND, Trentham; 2nd, Messrs. CYPHER & SONS; 3rd, Mr. JOHN ROBSON, Altrincham.

A group of Malmaison and other Carnations in pots, arranged for effect, obtained a 1st prize for Mr. JOHN ROBSON, Manchester.

Six plants in flower, distinct varieties (Orchids excluded), 1st, Messrs. CYPHER & SONS; 2nd, Mr. WM. VAUSE; 3rd, Mr. T. BOLTON, Oakmoor.

Six plants in flower, distinct, and six fine foliage plants, distinct, 1st, Messrs. CYPHER & SONS; 2nd, Mr. WM. VAUSE.

Messrs. CYPHER & SONS had also the best collection of eight exotic Orchids, distinct; 2nd, Duke of SUTHERLAND; 3rd, Mr. JOHN ROBSON.

ROSES.

The display of Roses was unusually good. The best collection of seventy-two, distinct varieties was shown by Messrs. R. HARKNESS & Co., Hitchin; 2nd, the KING'S ACRE NURSERIES Co., Hereford.

The best collection of forty-eight distinct varieties was shown by Messrs. TOWNSEND & SONS; 2nd, Messrs. PERKINS & SONS.

Mr. W. H. FRETTINGHAM won the 1st prize for thirty-six distinct varieties, three blooms of each variety; 2nd, Messrs. HARKNESS & Co.

The best lot of twelve new Roses, distinct varieties, introduced in 1902, 1903, and 1904, was shown by Messrs. PERKINS & SONS.

For twenty-four hybrid Teas, distinct varieties Messrs. HARKNESS & Co. were 1st; 2nd, Messrs. PERKINS & SONS; 3rd, Messrs. TOWNSEND & SONS.

The best collection of twenty-four Tea or Noisette Roses came from Mr. PRINCE, Oxford; 2nd, the KING'S ACRE NURSERIES; 3rd, Messrs. TOWNSEND & SONS, Worcester.

FRUIT AND VEGETABLES.

For a dessert table decorated with flowers and foliage, plants in pots being allowed but not Orchids; and not more than fourteen dishes of fruit selected from the list given: 1st, the Earl of HARRINGTON; 2nd, the Duke of WESTMINSTER; 3rd, the Earl of CARNARVON.

The best dinner table decorated with flowers and foliage only, plants in pots allowed: 1st, Mr. W. VAUSE; 2nd, Messrs. JENKINSON & SON, Newcastle (Staffs.).

For a collection of twelve dishes of fruit, not fewer than eight kinds, and not more than two varieties of a kind, to include black and white Grapes; each collection to be decorated with flowers and foliage: 1st, the Earl of LONDESBOURGH; 2nd, the Earl of HARRINGTON; 3rd, Lady BEAUMONT. The Earl of HARRINGTON was awarded the 1st prize for decoration: the Earl of LONDESBOURGH, 2nd, and Lady BEAUMONT, 3rd.

The best collection of six dishes of fruit, distinct kinds, to include two bunches black or white Grapes, or both, was shown by the Duke of WESTMINSTER; 2nd, Lord BAGOT.

For four bunches of Grapes, two black and two white, the Earl of HARRINGTON won the 1st prize; 2nd, Lord BAGOT; 3rd, Lady BEAUMONT.

For two bunches Black Hambro' Grapes: 1st, the Earl of HARRINGTON; 2nd, the Dowager Lady HINDLEY, Droitwich.

For two bunches black Grapes, any other variety: 1st, Lord BAGOT; 2nd, the Earl of HARRINGTON, Elvaston Castle, Derby.

For two bunches of White Muscat Grapes: 1st, the Earl of LONDESBOURGH; 2nd, Lord BAGOT.

For two bunches Grapes, any other variety, white: 1st, Lord BAGOT, Blythfield, Rugeley; 2nd, Mr. JOSEPH DRAKES, Market Rasen.

The best six Peaches came from the Duke of WESTMINSTER; 2nd, Lord BAGOT.

The best six Nectarines came from the Earl of CARNARVON, Brethby Park, Burton; 2nd, the Marquis of NORTHAMPTON, Castle Ashby, Northampton.

The best dish of twelve Tomatos was shown by the Earl of CARNARVON; 2nd, the Earl of LONDESBOURGH.

The prizes offered for a collection of vegetables grown from Messrs. SUTTON & SONS' seeds were won by the Earl of CARNARVON, 1st; Mr. J. DRAKES, 2nd; Mrs. SWANN, Oswestry, 3rd.

For a collection of vegetables grown from WEBB'S seeds: 1st, the Earl of CARNARVON; 2nd, Lady BEAUMONT; 3rd, Mrs. SWANN.

For a collection of vegetables grown from HEWITT'S seeds: 1st, Lady BEAUMONT; 2nd, Earl of CARNARVON.

NON-COMPETITIVE EXHIBITS FROM THE TRADE.

Medals were awarded as follows:—Mr. A. J. A. Bruce, Chorlton-cum-Hardy, Saracenias, Small Gold Medal; Messrs. Peed, London, Gloxinias, Large Gold Medal; Mr. Sydenham, Birmingham, Sweet Peas, Large Silver Medal; Messrs. Dobbie & Co., Rothesay, Sweet Peas, Violas, and Dahlias, Gold Medal; Messrs. Webb, Wordsley, Sweet Peas, &c., Silver Medal; Messrs. Artindale & Son, Sheffield, Violas, &c., Large Silver Medal; Mr. Hinton, Warwick, Sweet Peas, Large Gold Medal; Mr. Bentley, Leicester, Roses, Gold Medal; Messrs. Blackmore & Langdon, Twerton, Bath, Begonias, Gold Medal; Messrs. Dickson, Ltd., Chester, herbaceous flowers, Large Silver Medal; Mr. Child, Acock's Green, herbaceous flowers, Silver Medal.

SCUTICARIA DODGSONI.—This plant was shown at the last meeting of the Royal Horticultural Society by C. H. FEILING, Esq., Southgate (gr., Mr. STOCKING), not by Messrs. STANLEY, ASHTON & CO.

ANSWERS TO CORRESPONDENTS.

APPLES: Zola. The Codlin-moth. It is too late now to do anything but burn the affected Apples. Next year, in spring, spray the flower-buds with weak Bordeaux-mixture. For Onion-grub, see *Calendar of Garden Operations*, to be had from this office, price 6d.

CALCEOLARIA: A. H. M. See the answer of an expert last week. The disease is at present a mystery. It is all too common.

CARROTS: J. W., Horsham. The disease is due to a fungus—*Phoma sanguinolenta*. Later on the root becomes diseased, hence the safest course is to remove all affected plants before the diseased portions fall and infect the soil.

CEAAR DYING ON LAWN: F. E. S. The death may have occurred through drought at the roots, caused by the cutting of drains in the vicinity, or through the subsoil having become dry owing to the decrease in the rainfall for several seasons past.

CELERY: K. & B. Without further particulars as to details of cultivation we cannot answer your question. The plants have died at the roots, but the foliage is healthy.

CHIMONANTHUS FRAGRANS: C. E. It is not unusual for this winter-flowering plant to bear fruits.

CUCUMBER: R. V. & Son. See answer in last week's number, and refer to former volumes for figures.

HOLLY HEDGE: E. A. The Holly should be transplanted in April, or early in autumn. Choose a strong-growing variety with leaves similar to those of the hedge, which you do not describe. You omit to say how high the proposed close fence would be, and at what distance it would be placed from the hedge. We cannot therefore say whether it would be likely to injure the hedge or not.

MANURES: E. E. If you intend to apply farm-yard manure only, you may use it at the rate of 20 tons per acre.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—Ukon. *Polemonium humile*.—S. H. *Tropæolum peregrinum*, *Kerria japonica*, shrub. Uncertain about the Rose.—Land. 1, *Sparganium simplex*; 2, *Scleranthus annuus*; 3, *Echium vulgare*.—A. L. *Rhododendron cinnabarinum*.—Albus. *Tradescantia virginica*, the Spider-wort.—Zola. *Pellaea flexuosa*, often called *Platyloma flexuosum*.—A. C. R. 1, *Oncidium ornithorhynchum*; 2, *Eria bicolor*; 3, *Sarcanthus pugioniformis*.—T. H. W. 1, *Geranium pratense*; 2, *Salisburia adiantifolia*; 3, *Cornus mas*; 4, *Weigela rosea*; 5, *Campanula glomerata*; 6, *Sidalcea malvaeflora alba*; 7, *Veronica spicata*; 8, *Lychnis chalcadonica*; 9, *Geranium Endresii*.—G. R. 1, *Anthriscus vulgaris*; 2, *Heracleum sphondylium*; 3, *Humulus lupulus*; 4, *Lotus corniculatus*; 5, *Medicago lupulina*; 6, *Vicia cracca*.—C. S. C. *Spiræa confusa* alias *S. media*.—F. C. 1, *Ehus Cotinus*; 2, *Symphoricarpus racemosus*; 3, *Spiræa Douglasi*; 4, *S. callosa*; 5, *S. confusa*; 6, *S. opulifolia*.—A. H. 1, *Geranium sanguineum*; 2, *Sedum rupestre*; 3, *S. glaucum*; 4, *Saxifraga*, specimen insufficient; 5, *Alchemilla alpina*; 6, *Saxifraga umbrosa*.—S. R. 1, *Stachys lanata*; 2, *Spiræa filipendula*, double variety; 3, not recognised; 4, *Delphinium cardinale*; 5, *Astrantia major*, rose-coloured variety.

PEACHES: F. G. A parasitic fungus called *Entomosporium maculatum* is the cause of the disease. The only thing to do at present is to cut off and burn all diseased branches. Next spring, when the leaf-buds are expanding, spray with a dilute solution of Bordeaux-mixture to guard against a repetition of the disease.

PHLOX: Y. S. The disease is of insect origin. Each stem is mined down the centre by the maggot of some insect, which in some instances is still present.

POTATO: W. P. The appearance of tubers in the axils of the leaves is not uncommon. It sometimes arises from some injury to the tubers below ground.—F. W. T. See note on p. 28 of this issue.

ROSE: E. N. Send to some Rose-grower.

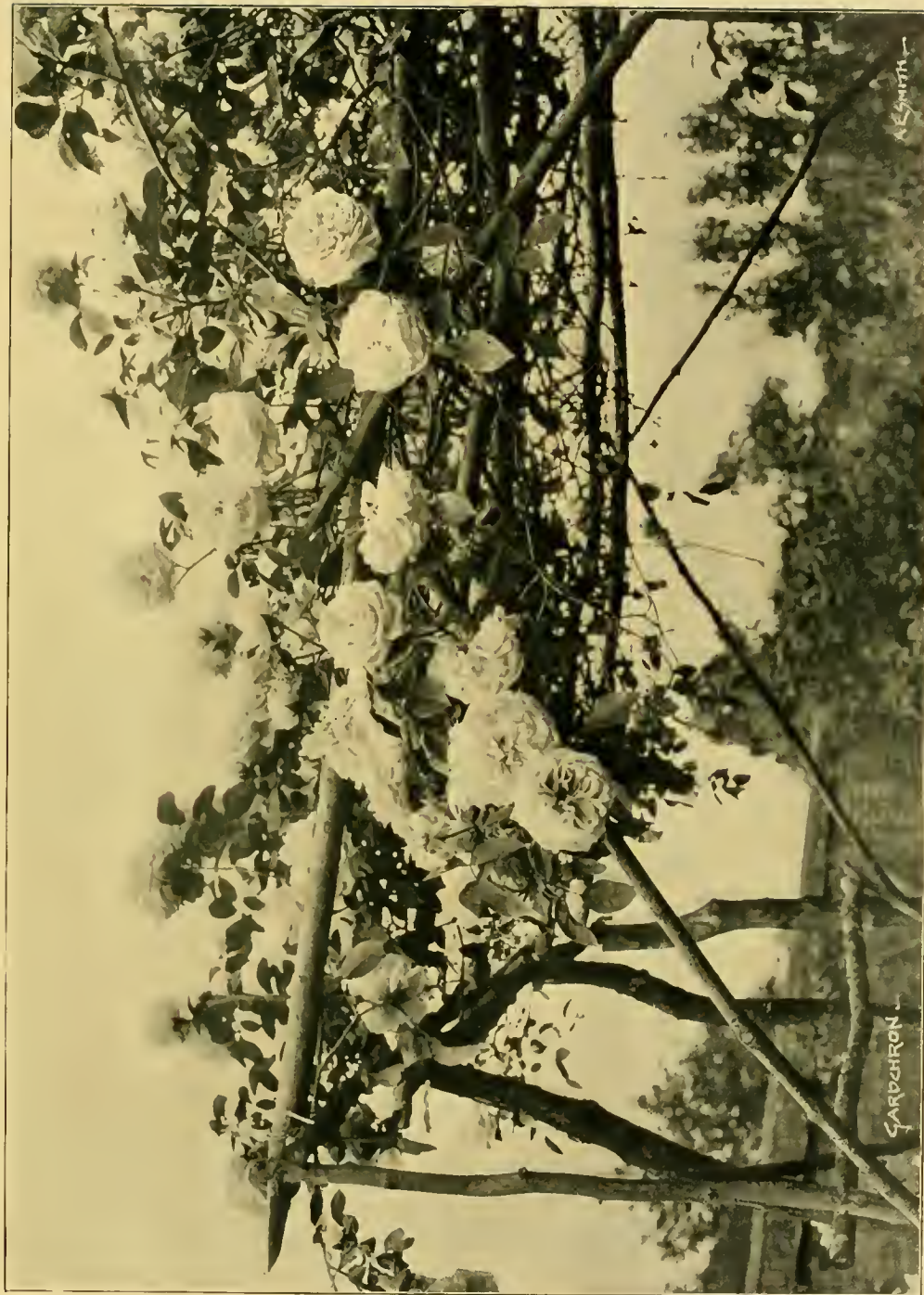
ROSE CAROLINE TESTOUT: J. K. B. This was doubtless an excellent specimen of this magnificent variety of Rose, but the numerous and large petals had fallen during transit.

WIRE-NETTING: W. F. O. To be quite safe you should use wire having $\frac{3}{4}$ -inch mesh. There is no reason why the bushes should become infested with red spider more than formerly, but certain other and larger insects may increase after excluding the birds, their natural enemies.

WHITTY-TREE: De St. In *A Dictionary of English Plant Names* (James Britten), the Whitty-tree is described as being *Pyrus Aucuparia*. The Whitty-Pear is either *Pyrus domestica* or *P. torminalis*. The Whitten tree is *Viburnum Opulus*.

COMMUNICATIONS RECEIVED.—United States Department of Agriculture, Washington (the letter has been forwarded).—H. T. Rudisill, Los Angeles (the letter has been forwarded).—F. J. A.—J. H. V.—M. H. W.—W. G. S.—H. H. Darmstadt.—A. W. D.—G. S.—H. G.—Norwood.—A. R. H.—A. B. R.—M. C. C.—W. P. R. (photo).—The Electrician.—Land.—Pennick & Co.—Dr. Bonavia.—F. W. B.—J. R. J.—Williams & Norgate.—J. K. Budde.—Utrecht.—W. J. B. (thanks).—A. C. F.—C. D.—H. R.—J. A.—S. & Co.—A. J. Bliss.—P. B. le Gras.—Royal Horticultural Society.—A. B. W.—H. J.—W. H. W.—A. H. S.—A. T. C.—J. G.—C. H. M.—T. S.—Expert.—R. D.—H. W. W.—E. H. J.—S. A.—M. & M. Darlington.—W. M. T.—C. F. A.—W. J. W. H.—Savoir.—M. H.—E. C.—Nuneham.—F. F.—A. H. O.—C. D.—Newport.—J. W. L. G.—J. R.—R. P. K. & Sons.—G. H.—J. E. H.—J. L.—H. F. McM., Ceylon.—W. J. T., Jamaica.

(For Markets and Weather, see p. x.)



SUMMER-FLOWERING ROSE, "BLAIRII No. 2": COLOUR OF FLOWERS ROSE-PINK. A GOOD VARIETY OF THE ROSE FOR A WALL, ARCH, OR PERGOLA.

From a Photograph by F. Mason Good.



THE

Gardeners' Chronicle

No. 916.—SATURDAY, July 16, 1904.

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PARKINSON'S "PARADISE."*

THE recent reprint in *facsimile*, and the republication of John Parkinson's celebrated work, by Messrs. Methuen & Co., reminds us of the debt we owe to him as one of the earliest lovers of hardy flowers, who left us a record in good and plain English of what they were and how to grow them. He was a herbalist, as were his rivals Gerard and Johnson, and he lived in stirring times, when Elizabeth, James I., and Charles I. occupied the throne. Of the man himself very little is known, and no literary details, except his published books, are known to exist. He resided in the parish of St. Martins-in-the-Fields, and possessed a garden in Long Acre, in which he grew the rarities his friends, correspondents, and collectors sent to him from time to time. It is to Parkinson that we owe the intro-

duction of the garden Rhubarb, it having been sent to him, as he himself tells us, by Dr. Matthew Lister "from beyond sea." Two contemporary portraits of our author are known to exist—viz., the wood-cut in the first edition of his *Paradisus*, the one in his *Theatrum Botanicum*, and in both he holds in his hand an inflorescence of *Lychnis chalcedonica flore-pleno*—the double flower of Bristowe or Nonesuch, of which he thought very highly. A modern statue to his memory was erected some few years ago in the Palm-house at Sefton Park, Liverpool, by Mr. H. Gates Thompson (see *Gardeners' Chronicle*, May 17, 1902, p. 318).

The *Paradisus* appeared in 1629, and the *Theatrum Botanicum* in 1640, and he died on August 6, 1650, having been born in the year 1567. A so-called second edition of the *Paradisus* was published in 1656, but is merely a reprint on thicker paper. It would nowadays be very interesting to know the original publisher's prices for copies of both the first edition and the reprint. During the eighty-three years of his life in London he must have seen and heard much of which he maintains a discreet silence in his books. In his younger days the great Queen Elizabeth was making her progresses, and, aided by Cecil, was laying the foundations of our naval supremacy of to-day. Parkinson would be about twenty-one years old when Elizabeth's fleet and the winds of heaven made short work of the great Armada from Spain. He may have seen Essex beheaded, and he was alive amongst his flowers when Raleigh, William Shakespeare, and Lord Bacon died. He may have seen and known Pepys, Evelyn, Gerald, Johnson, and John Tradescant II., sometime gardener at Hatfield, and many more of the celebrated people of the period.

Parkinson's book was produced before the era of greenhouse flowers or our so-called hothouse or stove plants, and relates to "all sorts of pleasant flowers our English ayre will permit to be noursed up." In other words, it is emphatically a book of hardy flowers, although herbs, roots, and fruits also find a place in his delightful pages.

The first plant he alludes to is the Crown Imperial, and the last is the Virginia Vine, or rather Ivy (*Ampelopsis quinquefolia*), the climbing propensities of which he minutely describes. He draws a distinction between ordinary perennials, such as Carnations and Pinks, *Lychnis*, Primroses, Violets, Stock Gilliflowers, and Aquilegias, which he calls English flowers, and many bulbous plants, *Cyclamen*, *Helleborus niger*, &c., which he speaks of as "outlandish" flowers. The word "outlandish," indeed, seems to have been used by Parkinson in a similar sense to that in which the word "imported" is used by ourselves to-day.

The flowers of the *Paradisus* are mostly of European origin; but some came from the Levant or Asia Minor, and a few others from Northern Africa and from North America, especially from Virginia, which Raleigh and others had recently explored. We may imagine John Parkinson as ever eager and alert for news of the wonderful vegetation of other countries, at a time when news travelled slowly, and importations were, as a rule, in the hands of the rich and powerful only. Nevertheless his strong and virile personality and his position as herbalist to King Charles I. and his beautiful young French Queen, must have brought him many

friends, and given him influence with the explorers of his time by sea and land. In any case the flowers, vegetables, and fruits he names and describes show us plainly that gardens were or might have been well stocked two or three centuries ago.

In considering the garden flowers of 1629, we must remember that not alone were imports and additions of exotics few and far between, but that there were no hybrids, and even cross-bred seedlings were accidental, and not the things ardently sought for as they are to-day. Even if specialists had appeared they were but few and far between. In any case we have ample evidence that Tulips, Narcissus, amongst bulbs, and Carnations and Pinks were, even at so early a date, both numerous and valuable in the gardens. Bulbous plants especially were doubtless imported from Italy and Holland, and curiously enough were at first sold in London by the merchant grocers of the period, or by the so-called Italian ware-housemen. The number of species and varieties of Narcissus, ninety-six in all, mentioned by Parkinson, has struck many modern growers of these spring flowers as being peculiar, but of course he had Bauhin's *Pinax*, and probably other Continental works to refer to as well, and he doubtless inserted some kinds that did not exist at the time in his own garden. Be this as it may, many forms of *N. pseudo-Narcissus* and of *N. poeticus* were known, and these represent the bed-rock or parents of all the finest modern seedlings as known to-day. In a word, so far as this genus is concerned, it is the increase in knowledge and its judicious application, rather than the increase of species or raw materials that has enabled us to improve so much on these and other garden flowers of nearly three centuries ago.

It is difficult for us to realise to-day the great interest the illustrations in this book, rude as they are, must have occasioned in the early seventeenth century. That they were in many, even if not in most cases copied from earlier works would not rob them of novelty in the eyes of those who saw them for the first time in 1629. The first edition is printed on good linen paper, but it was so thin that illustrations and letterpress in many cases show through the pages. The size is folio, and the old notion of the block-books is so far kept up that the figures of different flowers are all cut together on wood blocks the size of the letterpress page.

The title-page and frontispiece is combined, and represents the Garden of Eden as seen in the mind's eye of Switzer and other artists of the time. Palm, Orange, and Vine, the Banana, Pineapple, and other fruit trees grow beside a meandering stream, while in the foreground there are figures of Lilies, Hepaticas, Anemone, Dog's Tooth Violet, *Cyclamen*, Tulips, Carnation, Colchicum, and many other flowers. There are birds in the trees and fishes in the stream, with that complete angler, the common Heron, stolidly watching them from the bank according to ancient custom. Here also we may get a glimpse of Adam and Eve in all their primal simplicity; Adam is pruning a tree, while Eve gathers fruits and vegetables for dinner. The Carnation is as tall as Adam, and the Anemones and Tulips are as big as Eve; but such trifling inconsistencies do not detract from the interest

* "Paradisi in Sole. Paradisus terrestris or a Garden of all sorts of pleasant Flowers which our English Ayre will permit to be noursed up with a Kitchen Garden of all manner of Herbes Rootes and Frutes for Meate or Sauce vsed with vs and an Orchard of all Sorte of Fruithbearing Trees and Shrubbles fit for our Land together with the right Orderinge Planting and Preserving of them and their Vses and Vertues collected by John Parkinson Apothecary of London 1629." Reprinted in *facsimile* by Messrs. Methuen & Co., London, 1904. Price £2 2s. net.

of the picture, nor from the naïve spirit and boldness of the scheme.

Parkinson's book really represented to seventeenth-century gardeners and amateurs the *English Flower Garden* of to-day. Not alone was it the first original work in English on hardy garden flowers, but it was the first gardening book illustrated by so many wood blocks especially prepared for its pages. The volume itself is a folio of 612 pages, with frontispiece and title-page, dedicated to the young Queen Henrietta Maria, and 780 plants are represented on 109 page-blocks or tables. As Pulteney* says, "a modern florist wholly unacquainted with the state of the art (of gardening) at the time Parkinson wrote, would perhaps be surprised to find that his predecessors could enumerate, besides sixteen described distinct species, one hundred and twenty varieties of Tulip, sixty Anemones, more than ninety of the Narcissus tribe, fifty Hyacinths, fifty Carnations, twenty Pinks, thirty Crocuses, and above forty of the Iris genus. In the orchard we find above sixty kinds of Plums, as many Apples and Pears, thirty Cherries, and more than twenty Peaches."

The garden vegetation of Parkinson's book would be practically that known to Shakespeare and others who wrote or sang in Elizabethan times, and one can see now and then even in our own day how well the hardy flowers and architecture of that golden era agree and harmonise with each other.

The excellent reprint lately issued by Messrs. Methuen & Co. deserves all praise, being clearly and accurately printed on good paper, and issued in appropriate covers. It will enable many to add this charming old book to their libraries that could scarcely hope to secure an original copy in these days of high prices and increased demand. Thirty years ago this fine old book could be had for as many shillings as it now fetches pounds; but after the late Mrs. H. J. Ewing alluded to the work so sympathetically in *Mary's Meadow*, in 1883, the price advanced by leaps and bounds until £10 to £25 or more for complete and perfect copies is now obtained at auction sales. The publishers of the reprint are to be congratulated in having placed the classical old work within the reach of hundreds of modern readers interested in hardy flowers and the history of gardening in England.

ORCHID NOTES AND GLEANINGS.

CATTLEYA MENDELI METEOR.

UNDER this name in the late Dr. Smee's collection there was a plant of *Cattleya Mendeli* which rarely produced perfect flowers, although when perfect or nearly perfect flowers appeared, they were very beautiful. The plant was one of an importation the whole of the specimens in which displayed the same peculiarity in a greater or less degree. The plant referred to passed into the collection of Edward Roberts, Esq., Park Lodge, Eltham, and it has now produced an interesting and pretty inflorescence of three flowers, all dissimilar. The lowest flower has no coloured labellum as it is generally seen, but is made up of three sepals and three petals, all blush-white. The column tells something about the confusion of the segments, for it is double, and has two sets of anthers, disclosing the fact that the flower is made up of parts of two flowers in combination.

* *Historical and Biographical Sketches*, 1790, pp. 142, 143.

This arrangement is again demonstrated in a very interesting manner by the other two perfect flowers, which arise from a single stem at the base, which divides about half an inch up, and each division carries a perfect flower. But for the bifurcation, what is called an abnormal flower would have resulted.

One of these two perfect flowers has blush-white sepals and petals, and large carmine-crimson labellum beautifully veined as usual in this variety when perfect. The other, or twin-flower, is similar, except that one-half of the labellum is white and the other coloured.

ODONTOGLOSSUM CRISPUM "BOLTONI."

Our illustration (fig. 14) represents this finely blotched *Odontoglossum*, which was shown by R. G. Thwaites, Esq., Chessington, Christchurch Road, Streatham (gr., Mr. Black), at the recent Temple Show. The plant is said to have flowered



FIG. 14.—ODONTOGLOSSUM CRISPUM "BOLTONI."

Colour white, flushed with rose, and heavily blotched with purple.

out of an importation made by Mr. William Bolton, of Warrington. The variety, on account of the rich dark purple markings of the flower, attracted experts very much, and when the plant has become stronger the variety will be one of the best of its class. J. O'B.

CULTIVATION OF ORCHIDS IN LEAF-MOULD.

An important feature of the Horticultural Congress, organised by the Société Nationale d'Horticulture (Paris) last May, was a communication from M. L. Duval concerning the practical use of leaf-mould in cultivating Orchids of all genera. The *Revue Horticole* for July 1 gives us the following details on this subject:—

"In cultivating Orchids in leaf-mould success depends entirely upon skilful watering. The more nutritive, the denser, and the less permeable medium requires extra moisture. Thus a newly-imported plant should have the soil dry, and only the immediate vicinity of the bulbs should be moistened. Water is thus supplied gradually, and soaks in more and more deeply in proportion as new roots grow out into the leaf-mould, so that moisture and the roots spread simultaneously through the soil. The progress of the roots should be noticed, as this guides the watering necessary after occasional repotting.

"Further, as much as possible, watering should only be done on dry and sunny days that the moisture may be absorbed, but water may be freely sprinkled between the pots and on the stages.

"Even well-established Orchids in full vigour and growth need but moderate supplies of water, sufficient to moisten but not to saturate the mould; and if by accident it is saturated, the plant should be raised from the pot and left in the air for some hours to regain its normal state: moist but not saturated. In every case Orchids grown in leaf-mould must never be watered as are those in sphagnum, or disaster will ensue."

LÆLIA × PSYCHE.

Under this name Messrs. Charlesworth & Co. exhibited at the York Gala a pretty hybrid raised between *L. tenebrosa* and *L. × Latona* (*purpurata × cinnabarina*). An inflorescence

taken from a plant of the same hybrid, obtained by Eustace F. Clark, Esq., Chamonix, Teignmouth, from Messrs. Charlesworth, represents it as a fairly showy hybrid with the sepals and petals of a reddish-ochre colour, the labellum being purple with dark purple veining, the sides of the tube white. The colour is nearest to *L. × Latona*, but the flowers are larger.

VEGETABLES.

POTATO SYON HOUSE PROLIFIC.

"Not half as much 'boomed' as its merits deserve," was the remark of Mr. May recently when I visited the gardens at Northaw House. The batch observed growing at Northaw is a very even lot. The haulm is sturdy and robust. Mr. May finds this variety practically free from disease. Northern Star, Discovery, Eldorado, Evergood, &c., are this season being given a trial by the side of Syon House Prolific. The vegetable garden at Northaw, though not extensive, is nevertheless exceptionally well cultivated. H. Markham.

SUTTON'S SNOWBALL TURNIP.

I cannot speak too highly of this Turnip. The roots are perfect in form and pure white in

colour. The rind is quite tender if the roots are pulled and cooked at the proper time, and their flavour is excellent. Seeds should be sown at intervals of about three weeks, and the plants should be encouraged to grow fast.

VEITCH'S EARLY-FORCING CAULIFLOWER.

This variety is unsurpassed for evenness in size, compact pure white heads, and fine flavour. It is a first-rate variety for the table during the latter part of May, and in June and July. The seeds should be sown early in January in boxes in a gentle heat, and the seedlings should be potted off into 3-inch pots and grown on in gentle heat until

THE ROCK GARDEN.

SAXIFRAGA McNABIANA.

ALTHOUGH by no means rare, this plant is worthy of more extensive culture, and is deserving of a place in every collection of hardy plants. It is easy of cultivation, and by its profuse blooming well repays any care bestowed upon it. It succeeds admirably when planted on the higher situations of the rockery in a compost consisting of good loam mixed with a little sand and leaf-mould. It is also a good plant for the front row of the herbaceous border; it must be grown in a situation where it obtains plenty of sunlight. It can be easily increased by division, either in the early spring or after it has done flowering. *J. Kelley.*

SAXIFRAGA KOLENATIANA.

This distinct and pleasing species is of easy cultivation. The rosettes of leaves bear some affinity to those of *S. aizoon* in point of size and form, but are greener, and have decidedly less of the incrustated character which marks the latter species and all its forms. The pale-green leaves of the above are oblong-obtuse, pitted with a few white spots at the margin. The rosettes are generally more cupped than in *S. aizoon*; the growth clustered and less spreading. The flowers are so copiously spotted with bright pink that under artificial light they appear quite of a self-rose or pink shade. But the groundwork of the petals is actually white, although copiously spotted with pink. The species is a native of Asia Minor. While a plant succeeds admirably in a soil largely composed of chalk, with nuggets of the chalk about its roots, another plant is quite as vigorous in a mixture of loam and manure such as one would employ for *Chrysanthemums*, except for a larger proportion of grit.

SAXIFRAGA GRISEBACHII.

When, in the early days of 1903, this distinct Macedonian species was exhibited at the Drill Hall, and obtained the First-class Certificate, the plants without exception gave one the impression, so far as the barren rosettes of leaves were concerned, of a rather large form of *S. calyciflora* (= *media*). At the present time, after growing for eighteen months in this part of Middlesex, the plants have quite an altered appearance, some of the larger rosettes having a diameter of fully 3 inches. In this stage any grower of Alpines may be excused for mistaking the plant for *S. longifolia*, a seedling half-grown. I need hardly say the plant is more striking than formerly, and one naturally looks forward to a flowering as much increased in proportion as the plant now is. Few novelties in this large interesting genus have attracted so much attention as this very early-flowering species. The plant is one of the most easy to grow, and as it makes abundant roots will repay for liberal treatment, including ample summer waterings. *E. Jenkins, Hampton.*

STRAWBERRY MOULD.

STRAWBERRIES require moderate rain when the fruits are forming, but after that, much sun and drought are necessary. A disease which one very often observes, in particular after sudden changes of temperature or rain, is caused by a parasitic fungus called *Botrytis cinerea*, Persoon. The fungus develops whitish or bluish-green velvety patches on the fruits, and often one finds two or more berries as it were "glued" together by the mould, as is shown in Fig. 16. The disease appears suddenly and spreads rapidly, as may be observed on freshly-picked Strawberries, when kept for a little while. Examined under the microscope the mould is seen to consist of numerous fine threads (mycelium), which branch frequently and become entangled with

those from another fruit, and thus cause the fruits to stick together. Many of the branches bear numerous small spores (fig. 17), which are easily broken off and are carried about in the air, reproducing the disease. The fungus only attacks fruits that have been injured by birds or wasps. When picking the fruits, care must be

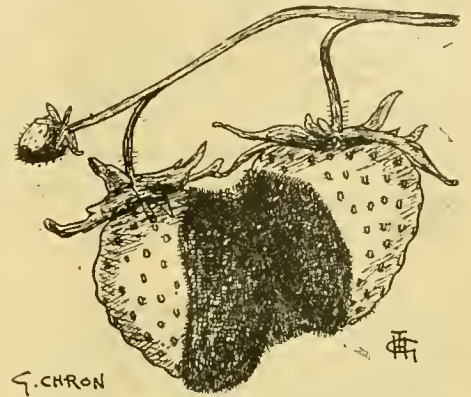


FIG. 16.—STRAWBERRY FRUIT ATTACKED BY THE FUNGUS BOTRYTIS CINEREA.

taken not to handle them more than is necessary. To prevent birds getting at the berries the fields should be netted, as is done in most gardens. If, when picking the fruits, "mouldy" ones are met with, they should be removed from the field and burnt, to kill the spores. No artificial methods of



FIG. 17.—THE FUNGUS BOTRYTIS CINEREA.

prevention can be employed. The commonly used fungicides are poisonous, and would poison the fruits when sprayed with them. Strawberries are provided with little or no natural protection, such as is afforded by the "bloom" of Plums, Pears, or Apples. The wax layer on the Strawberry is very minute, and cannot protect the fruits from an attack of the fungus. *Hans Güssow, F.R.M.S.*



FIG. 15.—LUPINUS POLYPHYLLUS ROSEUS.

the end of February, gradually hardening them for planting-out in well-prepared and sheltered quarters of the garden at about the second week in March. The heads will then be fit to cut at about the end of May, and the supply will continue until July, when the variety Walcheren is ready for use. *C. J. Ellis, Warren House Gardens.*

LUPINUS POLYPHYLLUS ROSEUS.

This is a pleasing variety of the perennial Lupin. It was exhibited by Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, at the Temple Show, when the Floral Committee recommended it an Award of Merit. The flowers are rosy-pink coloured, with the lower half of each flower of slightly paler hue. This variety should prove a valuable acquisition for cultivation in the herbaceous border.

In paging the work, during its publication in Parts, the description of each Tree commenced page 1; but each sheet was distinguished by a Signature No. in addition to the usual signature.

The Trees described number 44, and the sets of No. Signatures range from 1 to 46, including the three miscellaneous subjects at end of Vol. III.

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Title	1 Sheet	...	52	10 xii. 84
Dedication	1 "	...	"	" " "
Preface	1 "	...	"	" " "
List of Subscribers	...	1 "	...	51	" " "
PINUS albicaulis ...	34	2 "	1 to 4	38	" " "
" aristata	35	2 "	5 to 8	39	" " "
" Ayacahuite ...	40	1 "	9 & 10	50	" " "
" Balfouriana ...	36	1 "	11 & 12	33	" " "
" Bungeana	37	2 "	13 to 16	43	" " "
" Cembra	16	3 "	17 to 22	16	10 vi. 66
" Coulteri	38	2 "	23 to 26	44	10 xii. 84
" excelsa	22	3 "	27 to 32	24	20 vi. 67
" flexilis	39	2 "	33 to 35	44	10 xii. 84
" insignis	19	4 "	37 to 44	19	24 xi. 66
" Jeffreyi	8	1 "	45 & 46	5	30 ix. 64
" Lambertiana ...	3	4 "	47 to 54	2	24 vii. 63
" Laricio	44	3 "	55 to 60	51	10 xii. 84
" Mandseurica ...	17	2 "	61 to 64	17	30 vi. 66
" monophylla ...	27	2 "	65 to 68	30	16 ix. 68
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" porphyrocarpa ...	42	1 "	83 & 84	39	10 xii. 84
" Sabiniana	12	2 "	85 to 88	11	28 vii. 65
" Teda	18	2 "	89 to 92	18	24 xi. 66
" tuberculata ...	10	3 "	93 to 98	9	8 v. 65
ARAUCARIA imbricata	32	6 "	99 to 110	36 & 37	21 ii. 77

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Plates.					
PINUS insignis ...	Tree	Frontispiece	Pl. i.	19	24 xi. 66
" Ayacahuite ...	Cone	To face p. 9	Pl. ii.	50	10 xii. 84
" Cembra	"	" 17	Pl. iii.	18	24 xi. 66
" excelsa	"	" 27	Pl. iv.	24	29 vi. 67
" insignis	Tree	" 37	Pl. v.	29	16 ix. 68
" Jeffreyi	Cone	" 45	Pl. vi.	5	30 ix. 64
" Lambertiana ...	"	" 47	Pl. vii.	2	24 vii. 63
" Laricio	"	" 55	Pl. viii.	43 or 39	10 xii. 84
" Fremontiana (monophylla)	"	" 65	Pl. ix.	30	16 ix. 68
" Pinaster	"	" 71	Pl. x.	28	2 v. 68
" Sabiniana	"	" 85	Pl. xi.	11	28 vii. 65
" Teda	"	" 89	Pl. xii.	16	30 vi. 66
" tuberculata ...	"	" 93	Pl. xiii.	9	8 v. 65
ARAUCARIA imbricata	Tree	" 99	Pl. xiv.	37	21 ii. 77
" "	Cone	" 100	Pl. xv.	39 or 43	10 xii. 84

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" Douglasii	29	10 "	115 to 131	32, 33, 34	131 v. 69
" excelsa	21	9 "	135 to 152	26 & 27	2 v. 68
" Hookeriana	6	2 "	153 to 156	4	31 xii. 63
" Patoniana	5	1 "	157 & 158	4	21 xii. 63
" medioxima	25	2 "	159 to 162	28	2 v. 68
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PICEA Apollinis ...	7	2 "	167 to 170	5	30 ix. 64
" bracteata	13	2 "	171 to 174	13	28 xii. 65
" Cephalonica ...	2	3 "	175 to 180	3	21 x. 63
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" Pinsapo	4	1 "	189 & 190	3	21 x. 63

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CUPRESSUS Lawsoniana ...	15	2 Sheet	191 to 194	15	7 iii. 66
" macrocarpa ...	43	2 "	195 to 198	10	10 xii. 84
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" torulosa	23	2 "	201 to 204	25	2 xii. 67
TAXODIUM distichum ...	50	5 "	205 to 214	35 & 36	21 ii. 77
" Montezumae ...	31	1 "	215 & 216	36	21 ii. 77
Plates.					
ABIES Albertiana ...	Tree	Frontispiece	Pl. xvi.	12	28 xii. 65
" Douglasii	"	To face p. 115	Pl. xvii.	23	9 x. 73
" "	Cone	" 116	Pl. xviii.	32	31 v. 69
" excelsa	"	" 135	Pl. xix.	26	2 xii. 67
" Carpatica	"	" 137	Pl. xx.	27	2 v. 68
" Hookeriana	Tree	" 163	Pl. xxi.	10	28 vii. 65
" " and Patoniana ...	Cone	" 156	Pl. xxii.	4	31 xii. 63
" orientalis	"	" 161	Pl. xxiii.	14	7 iii. 66
PICEA Apollinis ...	"	" 167	Pl. xxiv.	5	30 ix. 64
" bracteata	Tree	" 171	Pl. xxv.	13	28 xii. 65
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CUPRESSUS Lawsoniana ...	Branch	" 191	Pl. xxxi.	15	7 iii. 66
" macrocarpa	"	" 195	Pl. xxxii.	50	10 xii. 84
" Lambertiana ...	Tree	" 196	Pl. xxxiii.	38	10 xii. 84
" Nutkaensis	"	" 199	Pl. xxxiv.	31	31 v. 69
" torulosa	"	" 201	Pl. xxxv.	25	2 xii. 67
TAXODIUM Montezumae ...	"	" 215	Pl. xxxvi.	36	21 ii. 77

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" Deodara	9	11 "	225 to 246	6, 7, 8	30 ix. 64
" Libani	33	26 "	247 to 298	40, 41, 42, 43, 46, 47, 48 & 49	10 xii. 84
SEQUOIA Welling-tonia ...	20	12 "	299 to 322	21, 22, 23	9 iv. 67
Seed of Coniferæ ...	45	2 "	323 & 324		10 xii. 84
Prices of Coniferæ ...	46	2 "	325 & 326		10 xii. 84
Index			327 to 330		
Plates.					
SEQUOIA Welling-tonia ...	Trunk of tree	Frontispiece	Pl. xxxvii.	21	9 iv. 67
CEDRUS Atlantica ...	Cone	To face p. 217	Pl. xxxviii.	20	9 iv. 67
" Deodara	Tree	" 225	Pl. xxxix.	6	30 ix. 64
" "	Cone	" 230	Pl. xl.	7	30 ix. 64
" "	{ Grove at Nachar }	" 244	Pl. xli.	8	8 v. 65
" Libani	Cone	" 245	Pl. xlii.	10	28 vii. 65
" Deodara	At Nachar	" 246	Pl. xliii.	10	28 vii. 65
" Libani	Tree	" 247	Pl. xliiv.	34	9 x. 73
" "	Cone	" 248	Pl. xlv.	42	10 xii. 84
" "	Map of Cedars	" 251	Pl. xlvi.	46	" " "
" "	Photo from A.	" 260	Pl. xlvii.	45	" " "
" "	" B.	" 264	Pl. xlviii.	41	" " "
" "	" C.	" 268	Pl. xlix.	48	" " "
" "	" D.	" 274	Pl. l.	40	" " "
SEQUOIA Welling-tonia ...	Cone	" 299	Pl. li.	22	20 vi. 67
" sempervirens ...	"	" 303	Pl. lii.	44	10 xii. 84
" Wellingtonia ...	2 Guardsmen	" 305	Pl. liii.	23	20 vi. 67

B. B. Woodward.

FORESTRY.

PEDUNCULATE AND SESSILE OAKS.

SOME time ago [see *Gardeners' Chronicle*, vol. xxxiii., 1903], a number of letters appeared in the *Gardeners' Chronicle* about *Quercus pedunculata* and *Q. sessiliflora*, but none of the writers seems to know anything of the various little differences between the two. Mr. Simpson, who writes a good deal on matters of forestry, says that practically there is no difference between them, because he finds in Oak woods many intermediate forms between them. This is no doubt quite true, because the nurserymen raise their seedlings from mixed seed, and they are planted indiscriminately, so that a large part of what are grown in woods are practically mongrels. But the true species are very different in various ways. The leaves of pedunculata are perfectly sessile, oblong, and deeply sinuous; whilst those of sessiliflora have a leaf-stalk $\frac{2}{3}$ of an inch long, and are the shape of a Chestnut leaf, with a

serrated edge, so that I have usually called it the "Chestnut-leaved Oak." The branches, in the young trees especially, grow in a more ascending manner than in the other species, and the appearance of the two is very different, each having a distinct beauty of its own. There seems to be evidence that sessiliflora affects poorer and drier soil than suits pedunculata; it certainly is commoner in mountainous parts of the North of England than further South. Loudon says that pedunculata never grows naturally from seed on stony or poor soil. Then there is some reason to suppose that old Oak roofs, which in several instances have been supposed to be Chestnut, are really the wood of sessiliflora, which does not show what timber merchants call the silver grain so much as the common Oak does. I certainly have seen a plank from a very old Oak roof which seems to show less silver grain than an ordinary Oak board. On this subject I have a very interesting letter by Mr. Thos. Blashill, discussing the question of the timber of the two Oaks and Chestnut, in which he says that he does not know

of any difference in the wood of the two Oaks, but that he knows of several instances of old roofs being said to be of Chestnut, but that in all these cases they were really of Oak. At any rate, the lighter green and the very different habit of the Chestnut-leaved Oak make it desirable, when planting for ornament, to grow the two kinds separately, instead of growing only the ordinary mongrels that are usually planted. M. Levassieur, of Orleans, advertises seedlings of true pedunculata, and I have from Messrs. Little & Ballantine, of Carlisle, seedlings said to be of true sessiliflora. C. W. Strickland, Hildenley, Malton.

PLANT PORTRAITS.

LELIO-CATTLEYA HIGHBURYENSIS, *Illustrierte Garten Zeitung*, June.

BANKSIA INTEGRIFOLIA, *Maiden Forest Flora N. S. Wales*, t. 29.

EUCALYPTUS PANICULATA, *Maiden Forest Flora N. S. Wales*, t. 30.

BARKLYA SYRINGIFOLIA (Leguminosae), *Maiden Forest Flora N. S. Wales*, t. 31.

BASING PARK, HAMPSHIRE.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS is the seat of W. H. Nicholson, Esq., and is situated about eight miles from Alton, and as many from Petersfield. The mansion is most pleasantly placed in a well-wooded park. It is of Ionic design, and has been much improved by the owner during the last forty years. The elevation is about 700 feet above the sea-level. Now that the new railway is open, the gardens are within ten minutes' walk of Privett station—a great convenience.

The drives are well planned, and extend in a winding manner through the park, showing the beautiful undulations of the ground and the timber to advantage. The carriage-drives are planted at the margins with *Araucaria imbricata*, *Deodora Cedars*, and other ornamental trees.

The grounds are rich in handsome trees and Conifers. *Sequoia gigantea* is over 60 feet high, and has a trunk circumference of 16 feet at 3 feet from the ground. It is magnificently branched. Close to it is a remarkable specimen of Weeping Beech, with a spread of branches 60 feet in diameter, the bole a yard through at the base. The branches, sweeping the luxuriant turf right through to the centre, render this an imposing specimen. *Cedrus Libani* is seen in the Supplementary Illustration to this issue. An *Araucaria imbricata* on the south side of the lawn is 50 feet high, with a stem diameter of nearly a yard 2 feet from the base. *Abies nobilis* is a fine tree, but is showing unmistakable signs of age. *Cupressus Lawsoniana* is not less than 40 feet in height and most shapely. *Abies Nordmanniana* is of fine proportions and about 50 feet high. *Taxodium distichum* is noteworthy, as is also a very fine Weeping Ash; and *Æsculus aurea*, 30 feet high with a shapely head, standing on the lawn, is a fine object.

On each side of a terrace walk 100 yards long in front of a very fine orchard-house are some exceedingly good specimens of Portugal Laurel and Irish Yew planted alternately.

Flowering shrubs are represented by huge clumps of *Rhododendrons*, *Deutzia crenata*, fl.-pl., *Rhus Cotinus* (a fine bush), *Magnolias*, *Spiræa Reevesii alba*, Persian Lilacs, &c.

THE FLOWER GARDEN.

This department is not extensive but it is interesting. Many plants are grown in huge masses for cutting; such plants as *Gladiolus Colvillei*, The Bride, were grand. The plants were flowering for the third year in a bed in the kitchen-garden, giving abundance of huge spikes of their dainty flowers. *Montbretias*, *Salpiglossis*, *Clarkias*, *Lupinus atrosanguineus*, *Anemones*, *Carnations*, *East Lothian Stocks*, *Lobelia cardinalis* Firefly—an exceedingly fine batch. These and many more subjects are found extremely useful for supplying the demands of such a large establishment.

The flower-garden proper, as seen in the Supplementary Illustration, is composed of a series of beds around a central basin, in which Water-Lilies are luxuriating. The beds are massed with the usual summer occupants, such as tuberous *Begonias*, *Pelargoniums*, *Heliotropes*, *Marguerites*, &c., all planted with a view to giving masses of colour, backed up as they are with a thick background of *Rhododendrons* as seen from the mansion.

Never have I seen *Tropæolum speciosum* growing more freely or flowering more abundantly than in this particular site, planted at the foot of the *Rhododendrons*, and entwining its shoots amongst the leaves; the cool northern aspect seems to agree with its requirements to the letter.

A capital collection of hardy Ferns and a neat

rockery, upon which are being established choice alpine, occupy the western end of the lawn. *Shortia galacifolia*, *Dianthus alpinus*, *Gaultheria trichophylla*, *Gentiana acaulis*, and *Arenaria grandiflora* are thriving vigorously.

On the western corner of the mansion, just hidden by the Cedar in the illustration, is a magnificent plant of the variety of Golden Ivy known as Mrs. Pollock. A wall facing south, 12 feet high, running in a westerly direction, is clothed with flowering plants, as *Wistarias*, *Magnolias*, *Ceanothus Veitchii*, *Chimonanthus fragrans*, *Garrya elliptica*, &c. *Roses* are grown in quantities; the newer varieties are being added as they appear.

PLANT HOUSES.

These are numerous and well adapted for their requirements. The conservatory adjoining the eastern end of the mansion is a huge structure, in which are planted grand specimen Tree-Ferns, *Camellias*, &c. The roof is almost entirely covered with *Tacsonia van Volxemii* in rude health and floriferousness.

A compact newly-built span-roofed house for Carnations contains a grand batch of the popular varieties of Malmesbury and tree types. The stove contains *Caladiums*, *Gloxinias*, *Crotons*, *Pancratiums*, *Eucharis*, *Orchids* in variety and quantity, *Dipladenia boliviensis*, and *Brearlana* are, like the foregoing, in rude health, showing the treatment accorded being evidently of the right kind.

FRUIT HOUSES.

These comprise six vineries, Melon, Peach, and Cucumber-houses, besides a large orchard-house 100 yards long, in which Plums are largely and most satisfactorily cultivated. Especially fine are cordon-trained trees of *Gisborne's*, *Pond's*, *Prince of Wales*. Other varieties growing in various forms and bearing huge crops are *Purple Gage*, *Coe's Golden Drop*, *Monarch*, *Victoria*, *Wyedale* (an excellent late Plum), and *Jefferson*. *Peaches* and *Nectarines* include such sorts as *Stirling Castle*, *Early Beatrice*, *Rivers' Early York*, and *Royal George*. *Cherries*, too, are bearing a heavy crop of handsome fruit; *Elton* and *Governor Wood* are conspicuous for fruit of high quality.

The vineries contain heavy crops of desirable table fruit rather than huge bunches for show purposes. The varieties *Foster's Seedling*, *Lady Downes*, *Madresfield Court*, and *Black Hamburg* were carrying full crops of shapely bunches. *Melons* are a feature, growing in shallow boxes at the back of the Pine-stove. Such varieties as *Ringleader*, *Jubilee*, and *Hero of Lockinge* are cropping most freely, one plant in a 10-inch pot is carrying a second crop of ripe, handsome fruits, quite equal to those usually seen as the first crop.

THE KITCHEN GARDEN

is extensive. Huge quantities of everything that such a garden can produce are needed to meet everyday wants. *Peas* are especially a full crop of handsome pods. *Sutton's Early Giant Marrow* is remarkable, each pod carrying no fewer than ten or eleven *Peas* of high quality.

Hardy fruits, including *Strawberries*, are largely and well grown; all the leading varieties are introduced, and they succeed well. *Gooseberries* trained as branched cordons are a feature, carrying crops of handsome fruits.

Mr. T. Down, the gardener, is to be congratulated on the manner in which he is improving this garden in all departments, renovating the worn-out trees and otherwise making additions where beneficial, at the wish of a generous and an appreciative employer: E. M.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Dendrobiums.—Plants of *Dendrobium Phalænopsis* that are in small pots or shallow Orchid-pans are now making roots freely and strong, vigorous growth. They should be given every encouragement until the new pseudo-bulbs are completed. Elevate the plants near to the roof-glass in the warmest house or plant-stove. They delight in as much sun-heat as it is possible to afford them, and very thin shading only is necessary even during the hottest day in summer. When thoroughly well rooted the plants require almost unlimited supplies of water, with abundance of atmospheric moisture after the house is closed and the shadings are removed for the day. *Dendrobium Bensoniæ* and its variety *xanthinum* is now passing out of flower, and the new growths have already made considerable progress. These growths commence to push out numerous new roots when only a few inches high, so that if the plants require larger pots or fresh compost they should be afforded at once. Put the plants in the smallest pots or pans that they can be got into, afford plenty of drainage material, and only a very thin layer of fibrous peat, leaf-soil, and moss in equal proportions. This *Dendrobium* requires an abundance of water at the roots whilst growing, therefore by placing the plants in small receptacles there is less fear of the young growths damping-off than when larger ones are used. Let the plants be placed alongside and under the same conditions as *D. Phalænopsis*. All of the racemose section of *Dendrobium*, as *D. thyrsiflorum*, *D. densiflorum*, *D. suavisissimum*, &c., and the taller-growing varieties as *D. Dalhousieanum*, *D. moschatum*, *D. fimbriatum*, &c.; also the rare hybrids *D. illustre*, *D. porphyrogastrum*, *D. virginia*, *D. Dalhousie-nobile*, *D. formosum-Lowii*, and the autumn-flowering *D. formosum* may now be safely repotted if this is necessary. At Burford the racemose section grows best in a shady part of the Cattleya-house, while the other varieties mentioned delight in plenty of heat and moisture all through the growing season. *D. infundibulum* and its variety *D. Jamesianum* are also starting to grow, and may be repotted if necessary. Both plants come from high elevations, and should be grown in a cool, moist, shady part of the intermediate-house, affording them plenty of water at the roots during growth. Some growers cultivate them very successfully under the same conditions as the cool *Odontoglossums*.

The Cool-house.—The dwarf-growing *Promeneia* (*Zygopetalum*) *citrina* is now flowering in the cool-house with the *Masdevallias*. Two or three plants well furnished with their pretty yellow flowers form lovely objects when suspended low down from the roof. It will succeed in small, well-drained, shallow pans, in a compost of peat, leaf-soil, and sphagnum-moss, and may be suspended with the small-growing *Masdevallias*, or where such plants as *Odontoglossum Kossii* and *O. Cervantesii* succeed. The same cultural remarks apply to *P. stapelioides*, *P. Rollinsonii*, *P. micropterum*, and such species as *Ærides japonicum*, *Angræcum falcatum*, *Sarcochilus Hartmannii*, *S. Fitzgeraldii*, and the rare *Octadesmia montana*.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Apple-trees, whether trained as bushes or otherwise, growing on the Paradise stock and bearing heavy crops of fruit, will require to be fed at the roots. These surface-rooters should be afforded artificial manure and a top-dressing or mulching with well-rotted manure from the stock-yard. Previous to applying a mulch rake a few inches of the top soil from under the trees to form a basin fully 2 feet from the stem. Apply the artificial manure, and then afford a good soaking with water, and cover with a mulch of suitable manure to preserve the moisture in the soil. Afford further waterings when necessary, and occasionally apply liquid-manure instead of clear water. The fruits

should be thinned out, varying in degree according to the size the fruits of the variety attain to, and its habit of growth.

Treatment of Grafts.—Trees that were grafted in the spring will now require to have the scions supported with small sticks, which should be first tied to the stock. This will prevent the scions from being blown off or broken during stormy weather. Any young growths that are showing about the heads of the stocks should be cut away, so that all the strength of the tree may be directed towards the development of the scion. Make the labels secure, and let the names of the varieties be written distinctly, that no confusion may arise afterwards.

Fig-trees on walls.—Before these become crowded with large leaves and new wood, examine the trees and remove any useless shoots that are not required for filling up wall space or for fruiting next year. Tie shoots of medium strength over the older wood, and some may be trained back in a downward direction to furnish the walls from bottom to top with short-jointed fruiting wood, that will mature before the end of the season. As a rule, Fig-trees grow strong enough to be fruitful, but if the roots are in a very restricted space supplies of water and manure should be afforded them. Trees that have been planted by walls in favourable localities, and have been allowed to make unrestricted growth, often produce very heavy crops of excellent fruits, the variety Brown Turkey in particular.

Vines.—Continue to see that the leading growths are neatly secured to the trellises as often as necessary. These young shoots grow very quickly at this season, and if neglected soon become entangled and are somewhat difficult to separate. Stop all the young laterals two joints above the bunches of Grapes, if this has not been done already. Should the berries swell satisfactorily and appear likely to make moderately good bunches, thin out the berries somewhat, removing the smallest with a pair of Grape-scissors, and taking care not to prick the skin of those that are left for ripening. Should mildew appear dust the leaves with flowers-of-sulphur, and syringe it off with clean tepid water after the mildew has been destroyed.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Carpet-bedding Plants.—*Alternantheras* have not made much growth, and every encouragement should be given them by damping them overhead in the evenings, and by keeping the surface-soil loose by stirring it with the point of a small stick. *Mesembryanthems* will require to be pinched back, or they will soon overrun other plants. All "dot" plants that are plunged in pots will require water very frequently, for in the general watering afforded the beds they will not receive sufficient to soak through all the soil in the pots.

Begonias.—In view of the present hot weather, Begonias that are growing in the sunshine should be afforded a mulch with some manure from a spent Mushroom-bed. Hoe the ground over first, and take away all the weeds. Begonias will require to be watered, or the best results will not be obtained.

Seeds.—Place a few Yew-boughs over the beds in which seeds were sown a few weeks ago, to protect them from hot sunshine, especially if the seedlings are not making satisfactory progress. The boughs may be removed as soon as the sun has left them in the afternoon, and the seedlings be damped overhead. Use the hoe as soon as the seedlings can be seen; and if aphids put in its appearance, apply a small quantity of soot. Prepare some good, moderately rich ground, so that it may be ready when the seedlings need to be transplanted. A partially shady border is preferable, but not essential, as the plants will be better able to withstand a severe winter if put out in the open.

The General Work upon the flower-beds and borders for some weeks to come will include close attention to watering and weeding, and it will be necessary to afford stakes to those plants that require support. The work of watering should be done in the evening during hot weather. Regulate

the growths of plants in the beds, in order that each plant may have sufficient room to develop. *Calceolarias* do not like dry weather, but they should not be watered overhead, as this would knock the flower-trusses down. The plants should be afforded a mulch to keep the roots cool and prolong the flowering season. Other flowering plants should be potted-on, in preparation for planting in the place of the *Calceolarias* when these have flowered, if the stock of the *Calceolarias* can be spared.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peaches and Nectarines.—The old proverb, "A stitch in time saves nine," may be very appropriately applied to the early autumn planting of Peaches under glass. A moderate crop of fruits may be obtained in the first season after planting, provided the work is given sufficient forethought. A selection of suitable trees for the positions it is intended to furnish may be made now. Preference should be given to those that have clean, clear stems free from knots. In the planting of houses with "lean-to" roofs having a moderate extent of trellis, and, as is too often the case, a brick wall of considerable dimensions separating the ground-level from the glass, standard or half-standard trees are preferable. By planting such trees a greater proportion of light is secured under them, and the sun's rays are able to reach the border. In the case of span-roof houses running north and south this is of less importance, the light being much more abundant. The amount of trellis space generally allowed Peach-trees is too limited, the result being that the knife has to be used freely, and gross, unfruitful wood is produced. When the trellis space is very limited, the rooting space or border should be limited also. For example: after ten years, a trellis, 18 feet by 28 feet, against which one or even two trees may be planted, having a border 6 feet wide by 2 feet deep, including 12 inches of drainage, and containing fibrous roots and being under perfect control, will be found sufficient. But at the time of planting such trees the borders need only be made 3 feet wide, thus allowing for two additions of 18 inches each to be made during the first ten years. If fibrous loam of yellow colour can be procured, there may be added between the layers of unbroken turves some charcoal, half-inch bones, lime-rubble, and good wood-ashes, and the whole be made perfectly firm. Leave the border open upon both sides, whatever the form or position of the house may be, so that a free circulation of air may pass through and under the border. I prefer a level border, or one that only slightly slopes towards the stems of the trees. Water can then be more conveniently applied than if the slope were reversed. If there should be an opportunity, such a border may be made during the next two months.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

***Campanula persicifolia* and *C. persicifolia* alba.**—*Campanula pyramidalis* and *C. calycanthema* are very commonly grown in pots for decorative purposes, but those who have not grown the blue and white varieties of *C. persicifolia* in pots should try them. Being quite hardy, the plants can be wintered in any rough frame, where they will make steady progress. When well established in their flowering pots, they may be introduced into gentle warmth in batches, and a succession of excellent plants secured for decorative purposes from early spring until June. The flowers are also very useful in a cut state. For either purpose this species is much less stiff in appearance than the others. Their propagation and culture are very simple. Side growths may be taken at once from plants which are to be found in most herbaceous borders, and inserted singly in 3-inch pots. Let the cutting pots be placed in a shallow frame, which must be kept close and shaded during sunshine until the cuttings have taken root. When well rooted transfer the plants to 6-inch pots. A

suitable compost may consist of three parts loam, half-part leaf-soil, and half-part rotten manure. After the first year it will be found more convenient to take the cuttings from the pot plants as soon as they have passed out of flower, as by this system the plants may be placed in their final pots in good time.

Camellias which are in need of re-potting may be taken in hand immediately the new growth is completed, and before the flower-buds become prominent. Loam and hard fibrous peat in equal proportions, together with some sharp silver sand and a little broken charcoal, form a suitable compost for *Camellias*. Loam which contains very little lime is preferable, and where the only loam obtainable is of such a nature that *Rhododendrons* will not succeed in it, let the proportions be loam one part, and good hard peat three parts. Do not disturb the old ball more than is necessary to remove the drainage material, and as much of the old soil as is unoccupied with roots. Let the pots be well drained, and in potting ram the soil evenly until it is as firm as that of the old "ball." Before commencing to pot the plants make sure that the compost and the roots are moist, and then a copious syringing, morning and evening, will supply all the water that will be necessary for several days. If the plants are grown in a house having a southern aspect, shade will be necessary during bright sunshine.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Turnips.—Sow seeds at intervals from the present until the second week in August in sufficient quantities to meet the demand there will be in autumn and winter. Although a crop of Turnips may be expected from any good garden soil containing sufficient lime, a portion of the ground which has been occupied by early Cabbages or Cauliflowers, if not required for other crops, can be utilised for the purpose to best advantage. Afford such ground a thorough dressing of farmyard-manure and lime. Dig deeply and bury the manure well below the surface. Before sowing the seeds and previous to raking the ground, afford another dressing of lime. If this be done, the lime will be well mixed with the surface soil during the process of raking. Draw lines for the seeds at about 14 inches apart, and when doing so stand at right angles with the hoe and bring the soil to the one side away from the line, instead of getting partly in front of the hoe, a position in which the hoe pulls the soil in front, instead of clearing itself every stroke. The manner described above is that in which the work should be performed, but it is too seldom practised. Some good varieties of Turnips for sowing at this season are American Stone and Chirk Castle. Chirk Castle, a black-skinned variety, is a good one for keeping in winter. Orange Jelly I have recommended in previous Calendars as an excellent variety where yellow-coloured Turnips are in demand. Early White Milan for present sowing will answer perfectly as regards quality if the soil and situation are suitable.

Mushrooms.—Let no time be lost in commencing to gather a good supply of horse-droppings for the making of beds next month. Success will to some extent depend on having the manure prepared well by exposing it in an open shed for a considerable time to atmospheric influences, and by frequently turning it over, the details of which have been given in previous Calendars. Attend to beds in bearing and keep them as cool as possible. Damp the floors, walls, and coverings with paraffin and water in equal parts, applied through a very fine "rosed" can. Keep the water and paraffin well mixed during the application of the liquid. Dust the beds slightly with salt to prevent maggot, which is the common pest of summer Mushrooms. Should the beds become dry, water them with liquid-manure made from cow dung, adding a little salt.

Work in General.—Now that the weather is hot and dry, use the hoes almost constantly until all weeds are cleared away. Afford water to any crops that require it, and especially to plants which have been put out recently.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 16	Manchester Rose Show. German Gardeners' Club meet. Roy. Scot. Arboricultural Soc. Exh. of Forestry at Perth (4 days).
TUESDAY, JULY 19	National Chrysanthemum Society's Outing. Saltaire and Shipley Rose Show. Tibshelf Rose Show.
WEDNESDAY, JULY 20	Nat. Sweet Pea Soc. Show at Crystal Palace (2 days). Hereford and West of England Rose Show.
THURSDAY, JULY 21	Horticultural and Rose Shows at Halifax and Salterhebble. St. John's Hort. Soc. Leamington, Show. Carnegie Dunfermline Trust Summer Show (2 days).
FRIDAY, JULY 22	Opening of the New Hall of the Royal Horticultural Society by His Majesty THE KING (at noon).
FRIDAY, JULY 22	Handsworth Hort. Soc. Exh. (2 days). Roy. Bot. Soc. lecture.

SALE FOR THE WEEK.

FRIDAY NEXT—
150 *Cypripedium glaucophyllum* (new), new Colognyne, Phaius, Vandas, *Dendrobium* McCarthiae, Established Orchids, Palm Seeds, Retarded Lilies, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —63'4".

ACTUAL TEMPERATURES:—

LONDON.—July 13 (6 P.M.): Max. 79°; Min. 58°.

July 14.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden (10 A.M.): Bar., 30'2; Temp., 75°.

PROVINCES.—July 13 (6 P.M.): Max. 75°. S.E. Coast of England; Min. 59°. W. Coast of Ireland.

The Royal Horticultural Society. FORTUNE at the present time favours the premier Horticultural Society. Long may it do so! May it, to use a gardening phrase, ripen the wood and enable the Society to build up a reserve for the future! The first and foremost consideration at present is the completion of the Hall. Funds, and many of them, are still required if the Hall is to be opened free from debt and the Council is to be relieved from anxiety as to the future. Would that more of the Fellows and more of those who profit by the opportunities which the Society offers them would in their degree follow the noble example of Baron Sir HENRY SCHROEDER! We all know that but for his generosity and energy the Hall scheme would not have been floated at all; and now we have the special gratification of announcing that the Baron has taken upon himself the cost not only of removal of the books and portraits belonging to the Trustees of the Lindley Library, but also of providing new cases and the entire furniture for the new library. The sum of £1,000 will, it is to be hoped, not only be adequate for the fitting of the library, but leave a balance to be added to the very scanty, almost infinitesimal, sum at the disposal of the Trustees for the purchase of books and the proper maintenance of the library.

The Show at Holland House was held under the most favourable conditions as to weather, and the gay scene in the meadow

contrasted well with the serene beauty of the Elizabethan mansion—in London, it is true, but not of it. Among those to whom the President expressed the thanks of the Society at the luncheon, surely there was none to whom a greater measure of gratitude is due than to the Earl and Countess of ILCHESTER. Flower-shows are common enough nowadays, but a flower-show in such surroundings is assuredly something out of the ordinary way. Her Majesty the QUEEN was one of the early arrivals, and expressed herself well pleased with the exhibition.

The Show on the whole was up to the average, though not so rich as that at the Temple some weeks previously, and the Roses, owing to the advanced season, did not reach the standard attained by the National Rose Show last week. Messrs. PAUL & SON, of Cheshunt, deservedly won the Sherwood Cup for the best arrangement of Roses.

It is curious that, as at the Temple Show, the most novel exhibit was contributed by a foreigner. This time it was Messrs. WAVEREN & KRUIFF, of Sassenheim, near Haarlem, who attracted universal attention by their fine group of hybrid Astilbes, in which the usual white feathery inflorescence of some plants was mixed with various shades of rose and pink in others. This group and the noble specimen of *Furcraea*, brought from the Scilly Isles by Mr. DORRIEN-SMITH (fig. 20), constituted the most remarkable features of the Exhibition, for full details of which we refer to another column.

At the luncheon Sir TREVOR LAWRENCE alluded to the fact that this was the centenary year of the Society, and to the remarkable incidents connected with it, such as the completion of the Hall and its approaching opening by the KING, and the splendid gift of the garden at Wisley by Sir THOMAS HANBURY. Nearly a thousand new Fellows had joined the Society in the present year, so that the number now on the books was eight thousand three hundred and one.

Sir TREVOR took the opportunity of thanking the several Committees for their disinterested labours, and of recognising the services of the judges. Mr. GEORGE PAUL responded for the Committees, and while so doing called attention to the presence of Sir DANIEL MORRIS, a former Treasurer of the Society and Assistant Director of Kew, now doing excellent work in developing the resources of the West India Islands. Mr. PAUL spoke appropriately of the harmony and accord existing between the Council and the Committees.

Mr. MCINDOE returned thanks for the judges; and a cordial vote of thanks was proposed to the President at the instigation of Mr. KER. So pleasantly passed off the little function, when Council, Committees, and judges meet ("tis only once a year") to reciprocate good feeling and incite the Fellows to further exertions.

The next ceremonial of the Royal Horticultural Society will be the formal opening of the new Hall on Friday, July 22, by His Majesty the KING. The proceedings will, it is believed, be of a purely formal character, no exhibition as such will be attempted. Large as the Hall is, it would not be adequate to admit all the Fellows, or even a large proportion of them, and hence it has

been found requisite to limit the number of those present to those who have special invitations from the Council, or who purchase tickets. If there were an exhibition, the Fellows would be enabled to exercise their right, not only of personal admission, but of introducing a number of friends, so that some limitation became necessary, and this, as was pointed out in sundry announcements at Holland House, could only be effected by avoiding a public exhibition.

LORD ONSLOW AT SWANLEY HORTICULTURAL COLLEGE.—On Monday, July 11, the annual distribution of prizes took place at Swanley Horticultural College. Sir JOHN COCKBURN opened the proceedings. He said that in these days, when new avenues of activity for women were continually being opened up, he thought that there was a special corner for them in the shape of horticulture. He believed that the work done at Swanley had a bearing on the national prosperity, for every day our agricultural work was becoming more horticultural; cultivation grows continually more intense, and women can well turn their attention to what in France is known as "Petite culture." Sir JOHN COCKBURN had also a word to say with regard to the Colonial Section of the College, and he concluded his remarks by alluding to the great success obtained by the students of the College at the recent examination of the Royal Horticultural Society. The Earl of ONSLOW, President of the Board of Agriculture and Fisheries, then presented the prizes, this being the second occasion within the last few weeks in which he has officially recognised the teaching of horticulture. After touching upon the advantages of teaching women how to grow garden-produce, how to rear poultry and tend bees, Lord ONSLOW pointed out how useful such a College as Swanley might be made in the preparation of teachers of Nature-study, Sir HENRY MCCALLUM, the Governor of Natal, gave a brief but extremely interesting account of the work going on in his colony. He described the "Cash on Delivery System," by which the railways collected produce from the grower, delivered it direct to the consumer, collected the money, and paid it over less 5 per cent. for their trouble. He urged intending workers in Natal, and particularly girls, not to trust to Kaffir labour, but to learn to do everything for themselves. He finally spoke of the College for Horticulture which has been established in Natal, and when replying to a vote of thanks suggested that families rather than individuals should at first settle at Natal, promising that if a settlement could be made as a result of the efforts at Swanley it should bear this name.

NATIONAL ROSE SOCIETY.—It may interest our Rose-loving readers to know that the receipts in gate-money at the National Rose Society's recent exhibition in the Temple Gardens, and from the sale of tickets, exceeded those from the same sources last year by nearly £100; while, in a great measure owing to the Show's being held in such a central position in London, 100 new members have during the last two months joined the Society, bringing up the total number of members to over 1,100.

SOCIÉTÉ FRANÇAISE D'HORTICULTURE.—The Society will on July 28 visit East Burnham Park, near Slough, on the invitation of Mr. HARRY J. VEITCH, who will also accompany the party to Dropmore. The train leaves Paddington at 2.30 P.M. Those coming from other starting points are requested to be at Slough Station at 3.15 P.M., when brakes, kindly ordered by Mr. VEITCH, will be in readiness. Mr. G. SCHNEIDER, of 17, Ifield Road, Fulham Road, is the President.

'HYBRID CLEMATIS.—A few weeks since we had occasion to figure a hybrid raised at Mantua by Professor FRANCESCO MARCHI between *C. coccinea* and *C. lanuginosa*. In the current number of the *Revue Horticole* we find a coloured illustration and description of three varieties which originated from crossing *C. coccinea* (perennial) with one or other of the large-flowered Jackmanni section. The three varieties figured are Madame Raymond-Guillot, purple; Madame Moret, red; and Madame Lerocet, rosy-lilac. A full description is given by M. F. MOREL. The form of the flower in all cases is spreading, not vase-shaped, as in *coccinea*.

COLOURED CUCUMBER.—Messrs. MACK & MILN, nurserymen, Darlington, have forwarded to us an interesting colour sport in a Cucumber. The fruit is of a deep orange colour, somewhat similar to that which is seen in the seeding stage of a Cucumber. Indeed, we imagined this to be a ripened fruit, but were assured it was not so, and that the fruits commence to colour when but a few inches in length, becoming darker as they develop. The variety is Rockford's Market. Coloured Cucumbers may be a novelty, but we prefer them as green as possible.

MR. A. C. FORBES.—Our correspondent Mr. A. C. FORBES has been appointed Lecturer in Forestry by the Council of the Durham College of Science, Newcastle. He has had a practical training in the Knowfield Nurseries, Carlisle, and in the woods at Cullen House, Banffshire. He attended Dr. SOMERVILLE's class in Forestry and other classes in kindred subjects at Edinburgh University, and obtained medals in Forestry and Agricultural Botany. He afterwards proceeded to the Prussian Forest Academy at Eberswalde, and in 1892 was appointed forester on the Marquess of LANSDOWNE's estate in Wiltshire. In 1902 he became forester to the Marquess of BATH, on whose estates he had charge of 4,000 acres of woodland. He holds the diploma in Agriculture and the first-class certificate in Forestry of the Highland and Agricultural Society of Scotland, and has obtained two important first prizes for essays on Forestry subjects.

THE LATE M. MICHELI.—This gentleman was an expert cultivator as well as an eminent botanist. His herbarium has been presented by his widow to the city of Geneva, already extraordinarily rich in botanical collections.

IRIS KÄMPFERI.—We have received some fine blooms of this charming Japanese Iris from Messrs. V. N. GAUNTLETT & Co, Redruth. The flowers were of large size and in many beautiful colours, the veinings and markings on some of the varieties being highly pleasing. Judging from the quality of those received, this firm are evidently very successful as growers of these handsome flowers.

STOCK-TAKING: JUNE.—The value of our imports is £43,196,784, as against some £41,295,550 for June, 1903, or a gain of £1,901,234. The following is our usual condensed summary of imports:—

IMPORTS.	1903.	1904	Difference.
	£	£	£
Articles of food and drink—duty free	10,204,043	9,847,946	—356,097
Articles of food & drink—dutiable	7,845,909	8,727,040	+881,131
All other Imports...	23,245,598	24,621,798	+1,376,200

It is worthy of note here that the last-issued record of "Corn averages" gives the following result, the prices being per quarter, compared with the same period last year:—Wheat, 26s. 4d. (—1s. 5d.); Barley, 18s. 8d. (—1s. 11d.); Oats,

17s. 1d. (—1s. 5d.)—minus on all prices. As to fruit imports, the following in an interesting tabular resumé:—

IMPORTS.	1903.	1904.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw—			
Apples	41,125	125,435	+84,310
Apricots and Peaches	1,171	1,786	+315
Bananas ... bunches	342,334	427,395	+85,061
Cherries	51,790	139,787	+87,997
Currants	5,465	18,538	+13,073
Gooseberries	14,862	21,666	+6,804
Grapes	1,106	1,083	—23
Lemons	135,874	90,513	—45,361
Nuts—Almonds ...	3,250	5,908	+2,658
Others used as fruit	57,836	26,635	—31,201
Oranges	348,276	375,490	+27,214
Pears	696	781	+85
Plums	519	352	—167
Strawberries	25,695	27,773	+2,078
Unenumerated ...	10,450	15,981	+5,531
Vegetables, raw—			
Onions ... ..bush.	351,938	347,746	—4,192
Potatoes ... ..cwt.	1,510,589	2,038,411	+527,822
Tomatoes	146,895	153,813	+6,918
Vegetables, raw, unenumerated ...value	£39,615	£49,446	+£9,831

The imports of fresh flowers for the past month figure at £12,475. We can find no record of exports of nurserymen's products. The wood and timber imports are valued at £2,798,213, an increase over June, 1903, of £59,911. The total of the imports for the past six months is £271,953,771, against £260,529,889—a gain of no less than £11,423,882. As to the value of the

EXPORTS

for the month of June, the figures are £24,069,770; for the same period last year, £22,271,960—gain, £1,797,810. The final figures give the results of six months' exports as follows: £144,116,667, as compared with £142,522,625 for the same period in the previous year—a gain of £1,594,042.

CARNATION SHOW AT BIRMINGHAM.—The Midland Carnation and Picotee Society's Show will be held at the Botanical Gardens, Edgbaston, on Thursday and Friday, August 4 and 5, these dates having been fixed after the provisional dates July 28 and 29 were printed in the *Gardeners' Chronicle Almanack*, published at the beginning of the year.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

BEAUTIFUL WILD WALES.—The Riviera of Wales that lies between Menai Straits and the broad and sandy estuary of the Dee is at all times and seasons a lovely bit of country, but never more so than in the flowery glamour of mid-summer days. Even by rail it is charming, as the sunlight plays on the mountains and glistens on the sea; but the top of a coach is even better, and apart from its steepest roads, the bicyclist and the pedestrian may enjoy the beauty of its upland and the coast-scenery at a reasonable cost and with much pleasure. Beautiful Wales lies between the velvety mountains and the silvery sea, owing its popularity to both attractions—attractions so subtle and variable as to defy the pen and pencil alike, strive as strenuously as one may. Just at present every hedgerow and roadside, not omitting those modern reservations for our native wildings, the railway embankments, are really flowery wild gardens. The balmy Alder is in full flower everywhere, and every hedge is wreathed with Honeysuckle and wild Roses. Every ruined castle is a study in wall-gardening, none the worse for being natural. Over now, of course, is the Golden Furze or Gorse of the sunny banks and rocky declivities. Over, also, are the

Violets and the pale Primroses of spring, but every hedgebank is purple with Foxglove spires, and the old masonry at Conway Castle is crimsoned over with *Centranthus* or Valerian, and wild Roses on a carpet of Ivy-green. In the early spring the walls of Conway Castle and town alike are golden with Wallflowers, but at present the crimson Valerian, and the Pellitory, and the Roses have full sway. The tenantry of this old stronghold to-day are the starlings, the jackdaws, and the owls, while arch and tower, keep and dungeon only remain as "footprints on the sands of time." Conway and Carnarvon Castles were built by the same man, Henry Elreton, under the personal superintendence of Edward I, and having served their purpose more or less effectively in the history of progress, now remain as mere relics of the past. The roofless banqueting-hall echoes no longer to the sound of minstrelsy or of revelry by night, while guard-room and tower, the tiny little chapel and the Queen's chamber, are alike forsaken and forlorn. All is empty and desolate, but for memories and traditions, which like the wild flowers still cling to the silent walls. Wales on the mountains or by the sanded shores of the sea is lovely as ever, and one need not wonder at George Borrow in his love for wild Wales, for her rivers, waterfalls, and glens, for her piquant people, and for their gift of mysticism and of song. F. W. B.

OSMUNDA REGALIS.—I am rather puzzled at the description given of "fine specimens" of *Osmunda regalis* in your recent issue, in which the fronds are described as from 2 to 3 feet long. At Kew, in the rock garden, they are certainly double this length, and on the upper Dart I have seen the Fern so large as to resemble coppices at a distance, and on closer inspection I have been able to walk under the fronds, which reached considerably over my head. It is recorded as reaching 12 feet in height, and I consider this as by no means exaggerated. Fronds 2 to 3 feet are therefore comparatively small, and certainly do not justify the term "fine specimens." The size of the crowns described is certainly considerable, but at the Dart station I have in view, the entire ground consisted of huge continuous masses of caudex, covered with those dense-growing aerial rootlets peculiar to the species. C. T. Drury, F.L.S., V.M.H.

ROSE CRIMSON RAMBLER SPORTING.—Until this season we have never found this Rose give other than its rich crimson clusters of blossom, but recently almost the first to open were some pink-coloured sprays, the individual flowers of larger size than the type, semi-double, and more reflexed than imbricated. This occurred on two plants growing within a few yards of each other. Is it likely to be a reversion to some parental characteristic? Such sports, however, would have no commercial value, since there are others already named of this colour, and obtained from seeds, still, it is interesting, because Roses, unlike *Chrysanthemums*, are not usually so sportive in their floral dress. The plants under notice are healthy and flowering vigorously, so that the change of colour is not due to debility or accident. W. S.

APPLE NEWTON WONDER.—On p. 395 of the *Gardeners' Chronicle* for June 18 there was a letter from Mr. A. H. Pearson, Lowdham, respecting this Apple. He stated that he knows of no grower in either King's Newton or Melbourne who has planted the variety extensively. If Mr. Pearson cares to come to Melbourne station, I will gladly meet him, and show him where there are 2,000 trees in bearing, and upwards of 2,000 Crab and Paradise stocks ready for grafting. He also claims to be the distributor of this variety. I think that is hardly correct, for although Messrs. Pearson bought fifty trees, and also exhibited Apples which won at the Crystal Palace show, and they may have sold many trees, the raiser has done the same thing. In my experience this is one of the best Apples in cultivation. T. Salisbury.

MAGNOLIA WATSONI.—A plant growing under this name, as received from the nursery, has a very fine effect as a single specimen on the grass; its foliage is very striking and bold in appearance by reason of its large size and colour.

Although the specimen I am writing of is 11 feet high, I have not seen it flower. It is of very quick growth and quite hardy here, although in very exposed districts it may possibly get cut by spring frosts by reason of commencing growth so early. It is the earliest of several species growing near. At the present time some of the leaves, which are not fully developed, are 18 inches long and 8 to 10 inches wide, of a thick, leathery texture, dark olive-green on the upper surface, the under surface, deeply ribbed, is quite tomentose in appearance; these very prominent ribs towards the axils are of a light chocolate colour, which becomes lighter as they extend through the leaf. *W. H. Clarke, Aston Rowant Gardens, Oxon.* [This *Magnolia* was illustrated in the *Gardeners' Chronicle*, April 27, 1895, p. 516. Ed.]

IRISES.—I have noticed this year that an unusual number of my Irises have borne flowers with an abnormal number of segments, generally an increase from the usual six to eight. This was also noticeable among a large collection of Irises in my brother's garden at Hersham, and a friend at Tunbridge Wells reports the same circumstance. My collection of Irises is a small but fairly representative one of the different sections of the tall May and June-flowering Irises, including species; and in previous years I have observed that some are inclined to sport that way, notably *I. flavissima*, which has had one or two flowers with eight segments. This year every spike on a large plant had one and some two or three flowers with eight segments. A plant of "Thorbeck" with five spikes had a flower with eight segments at the top of each. In all cases it was the earliest flowers that had an increased number of segments, and in nearly every case it was the top flower of the spike. They occurred in all the sections and several species. It would be interesting to know if this has been observed generally throughout the country this year, and if so, what is the probable cause. It seems that soil or situation cannot have anything to do with it, as here I have a shallow soil on chalk on the brow of a hill, while my brother's garden is on sandy soil, comparatively low-lying and sheltered. Nor can it be due to any special methods of cultivation, for neither here nor at Hersham are they cultivated in any special sense—they just grow, nothing in the way of any mulch or artificials having been added to the soil of the Iris borders since they were made up for planting three years ago, and at Hersham they have been in the same position much longer; so that there seems some reason to think it may be due to the very wet season last year and the genial spring of this. The fact of these flowers being confined to the early ones and those at the top of the spike seems to indicate that the more immediate cause may be an abundance of food. On the other hand some are, I believe, of the opinion that reduplication of the floral whorls is caused by the opposite condition, dryness and a poor soil. More often than not these flowers were perfectly regular, all parts of the floral whorl being increased by one; and this regularity is striking when it is considered what a strong ancestral bias must be overcome in departing from the typical flower of six segments to one with eight segments. Several of these flowers, however, had only two stigmas, one of which was then generally bent over the reverse way to its usual position and lay superposed on the other. In one case (*pallida dalmatica*), showing the possible line of development, there were only three separate falls, but one was half again as broad as the others, and was slightly cleft at the apex, giving the petal a heart shape; the corresponding stigma was broader, and the stamen was practically two stamens joined together back to back. One may ask, Would a race of Irises with eight segments be desirable? I think it would in some cases, especially where the segments are comparatively narrow and bright coloured, and where the standards and falls are distinctly contrasted. In *Queen of May* and *Shorbeck*, for instance, the result was pleasing whether looked at from a distance or close to, and the increased size of the flower is then, I think, an advantage. Others, however, such as *pallida dalmatica*, *Mme. Chereau*, and all the variegated and squalens varieties, though they made a bigger

splash of colour at a distance, would not bear a close view. They looked crowded, and had lost something of their symmetry of form. *A. J. Bliss.*

THE COLOURING OF APPLES AND SOIL NITRIFICATION.—I am a Jersey gardener, and Apples, Pears, and Strawberries are largely grown in Jersey. The island is blessed with a fair amount of sunshine, and I have noticed that, unless there is a good proportion of nitrogen in the soil as well as sunshine above, if we get the colour in the fruit we lose flavour, and that to obtain both colour and flavour we must prune our trees properly and feed them properly. I have grown two trees of *Louis Bonne* of Jersey on the same plot of ground 12 feet apart, the one I have top-dressed in September and pruned on the short spur system, the other I have pruned back leaving from 4 to 6 inches of wood beyond the fruit-buds. From the first tree I gathered a heavy crop of well-coloured fruits of good size and flavour, and from the other a fair crop of fruits, lacking that bright rosy colour which is desirable

to carry on the business of importers and exporters of and dealers in fruit, vegetables, flowers, &c. No initial public issue.

MR. JOHN EDWARD SADLER, who represented Messrs. Jas. Backhouse & Son, Ltd., York, for many years, and recently Messrs. Rd. Smith & Co., Worcester, has been appointed representative for Messrs. Clibrans, Altrincham and Manchester.

MARKET CULTURE OF STRAWBERRIES.

OUR illustration, fig. 19, shows a common scene in our market gardens at this season. It is usual for the pickers to commence work soon after 2 A.M., continue until about 9 o'clock, when the Strawberries are sent to Covent Garden Market. All hands are called off, the fruit is weighed, and the foreman pays each gang (checks to the value of their gathering. The check is made of brass, and is exchanged for cash on pay-day.



FIG. 19.—A SCENE IN A MARKET GARDEN IN STRAWBERRY TIME.

and of inferior flavour. The same results have been obtained with *William's Bon Chrétien*. Unless a good top-dressing is afforded in September, and the trees are pruned on the short spur system, we may get fruits of good size and shape, but minus that grand flavour and juicy saline which we expect to find in a good Pear. In the cultivation of Apples, Cherries, Plums, Peaches, and above all Strawberries, if there is a fair amount of sunshine and the ground is properly dressed in the autumn, the trees and bushes are pruned properly, you may be sure of a good crop of fruits possessing large size, bright colour, and good flavour; but whatever the amount of sunshine and no top-dressing afforded, with improper pruning, the fruit will be inferior in colour, size, and flavour. *P. B. Le Cras, 2, Berkham Place, Lower Compton, Plymouth.*

TRADE NOTICES.

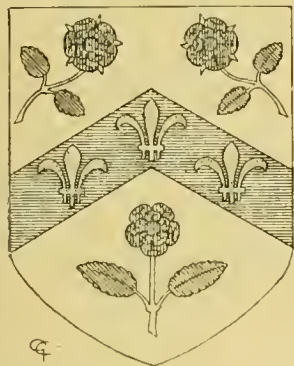
CROSBY AND HOLDSWORTH, LTD.—The above-named Company has been registered with a capital of £3,000 in £5 shares. Object, to acquire the business carried on at Hull as M. J. Holdsworth; to adopt an agreement with Margaret J. Holdsworth and Hannah E. Durlay to buy and sell in the United Kingdom, Channel Islands, Europe, America, or elsewhere, all kinds of fruit, vegetables, flowers, nuts, seeds, bulbs, and roots, and

Obituary.

ALFRED MADOUX.—The death of M. Alfred Madoux, the well-known orchidist, is announced.

RITCHIE BROWN.—A wide circle of friends will learn with much regret of the decease of Mr. Ritchie Brown, who died at Nursery House, Altrincham, on the 9th inst, in his fifty-first year. Mr. Brown was born at Lesmahagow, Lanarkshire, and came of a family who had been connected with forestry and horticulture for six or seven generations. He was apprenticed in Hamilton, after which he went for a period to Messrs. Dickson & Turnbull, of Perth, subsequently as manager for about five years with Thomas Imrie & Sons, of Ayr, representing that firm throughout the United Kingdom. On leaving there he took up the management of Charles Daly & Sons' Nursery, Coleraine, Ireland, and in 1884 was appointed nursery manager to Messrs. Wm. Fell & Co., of Hexham, which post he held for a period of thirteen years. In 1897 he was appointed to fill an important position at Altrincham in the Forestry and Landscape departments of Messrs. Clibrans, in whose service he was at the time of his death. Mr. Brown was one of the founders of the English Arboricultural Society, having been a member

twenty-two years. He acted as local secretary for Cheshire up to the time of his death. For many years he was a member of the Council, and took an active part in all matters concerning the welfare of the Society. He was a man of untiring energy, and an ardent supporter of everything appertaining to forestry. For some time past he represented the firm of "Clibrans" in the South of England, and at the end of last year he contracted a severe chill, which brought on pneumonia, confining him to bed until his death.



THE COAT-OF-ARMS OF SIR WALTER COPE, THE ORIGINAL BUILDER OF HOLLAND HOUSE.

ROYAL HORTICULTURAL. Exhibition at Holland House.

JULY 12, 13.

THE Royal Horticultural Society held its third exhibition in the grounds of Lord ILCHESTER, at Holland House, Kensington, on Tuesday and Wednesday last. The weather was glorious, and the meeting very enjoyable indeed to those present, many of whom doubtless took the opportunity to inspect Lord ILCHESTER'S remarkable garden. As an exhibition the Holland House Show will not compare favourably with that at the Temple, because, owing to so much more space being available, there is not the "weeding out" there is at the Temple, and consequently many exhibits at Holland House contained very commonplace plants and cut flowers. But some of the arranged groups had a conspicuously good effect. The FLORAL COMMITTEE recommended one First-class Certificate, ten Awards of Merit, and two Gold Medals to new or rare plants. The ORCHID COMMITTEE adjudged three First-class Certificates, two Botanical Certificates, and three Awards of Merit. The FRUIT AND VEGETABLE COMMITTEE recommended Awards of Merit to a new variety of Strawberry and a new Raspberry.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), J. Douglas, F. Sander, H. J. Chapman, H. A. Tracy, H. Little, J. Charlesworth, F. W. Ashton, A. A. McBean, W. Boxall, H. M. Pollett, W. H. Young, J. W. Odell, de B. Crawshaw, J. Colman, R. G. Thwaites, F. A. Rehder, M. Gleeson, H. Ballantine, G. F. Moore, T. W. Bond, and H. T. Pitt.

There was a very good show of Orchids, but the number of groups was not great, as, in consequence of the hot weather, many species are out of flower.

Messrs. SANDER & SONS, St. Albans, staged a fine group, excellent in every respect, the grouping in irregular sections with lighter plants suspended over being very effective. The whole arrangement had the pots concealed by short green moss and light foliage plants. Hybrids were well represented, and what is perhaps now more important several newly-imported species were shown. Among the large-flowered Cattleyas were a good set of albinos. *Cattleya* × Mrs. Myra Peeters (Warneri alba × Gaskelliana), *C. Mossie Wageneri* superba, and *C. M. W. xanthoglossa* were fine pure whites, the last named having a very rich yellow lip. *C. Mossie Reineckiana* varieties, *C. M. Sunset*, a delicately-tinted variety, with much yellow on the lip; *C. M. "Prince of Wales,"* a charming

blush-white in the section of *C. M. Reineckiana*; *C. M. vestalis*, and others were also very handsome. Of the hybrids, several of the best will be found in the list of Awards. Others very handsome were *Laelio-Cattleya* × *elegans* "King Edward," *L.-C.* × *Eclipse*, *L.-C.* × *D. S. Brown*, *L.-C.* × *Lord Kitchener*, good forms of *L.-C.* × *Martineti*, *L.-C.* × *Antigone*, *Cattleya* × *Gaudii*, *C.* × *Whitei* superba, large and very bright in colour. Among the *Cypripediums* were good *C.* × *Ultor*, *C.* × *Rolfes*, and *C.* × *Phoebe*. A collection of varieties of *Miltonia vexillaria* presented the fine large white *Miltonia vexillaria* "Queen Alexandra," and the brightly-coloured *M. v. superba*. Other special species and varieties noted were *Cattleya Harrisoniana* alba, *Odontoglossum Uro-Skinneri* album, *O. citrosum* purpurascens, *O. ramosissimum* (with five spikes), a number of the fine Java form of *Phalenopsis aroabilis*, *Bulbophyllum barbigerrum*, *Vanda cerulea*, *Saccolabium guttatum*, the new variety of *Dendrobium superbum*, *D. bicameratum*, and a large number of other interesting and showy plants.

JEREMIAH COLMAN, Esq., Gaddon Park (gr., Mr. W. P. Bound), staged a very effective group, lightly set up with graceful foliage and fine specimens of Pitcher-plants. Trained along the front were very long and finely flowered spikes of *Oncidium macranthum* which imparted a novel feature. Forms of *Odontoglossum crispum*, which were scarce in other groups, were well represented, the best of the spotted forms being *O. crispum* Mary Colman, *O. c. Mrs. Jeremiah Colman*, *O. c. Bonnyanum*, and a fine purple-spotted variety flowering for the first time. Others specially attractive were *Laelio-Cattleya* × *Sunrise*, a clear yellow; *L.-C.* × *callistoglossa* superba, rich in colour; good forms of *Cattleya Mossie*, including *Reineckiana*; *Cypripedium callosum* Sandere, *C. Godefroyae* leucochilum, *Masdevallia Veitchiana*, *Lycaste leucantha*, *Epidendrum prismatocarpum*, &c.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), had a small, select group made up of *Sobralia macrantha*, *S. xantholeuca*, the pretty *S. x. Wiganie*; a finely-coloured *Laelio-Cattleya* × *eximia*; the very beautiful *Zygopetalum* × *Roehlingianum*, *Phalenopsis violacea*, *P. speciosa*, *Cattleya Mendeli* Lowie, *C. x Adonis*, good *C. Gaskelliana*, *C. Eldorado*, *Cypripedium superbiens*, *C. Lawrenceanum* Hyeannum, *C. Parishii*, *C. Godefroyae* leucochilum, and *Cochlidia Noezliana*.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a very fine group, the centre of which, at the back, contained a finely-flowered batch of *Oncidium macranthum*, on each side being a selection of the Brazilian *Oncidiiums*, and a number of good forms of *Odontoglossum crispum*. Hybrid species and varieties were equally well represented, among the hybrids being the pretty orange and purple *Laelio-Cattleya* × *Adolphus*, a very remarkable set of *L.-C.* × *Canhamiana*, ranging from pure white with dark rose lip to rose with purple labellum; *L.-C.* × *Hippolyta* var. *Phoebe* in several varieties; the pretty *L.-C.* × *Remula*, *L.-C.* × *Aphrodite*, white and rose forms; *L.-C.* × *Ingrami*; *Miltonia vexillaria* varieties, including the purest white form, *M. v. albiflora*; *Brasso-Laelia* × *Digbyano-purpurata*; albino *Cattleyas*, including *C. Mossie Wageneri*, *C. M. Reineckiana*, and a very clear white *C. Gaskelliana* alba; *Cattleya* × *Niobe*, *Anguloa uniflora*, *Aerides l'Ansoni*, the rare and handsome white *Mormodes luxatum eburneum*, *Vanda cerulea*, *Barkeria spectabilis*, *Zygopetalum stapelioides*, &c.

At the end of the large tent Messrs. HUGH LOW & Co., staged a good representative group, the central plant of which was a charming specimen of *Cattleya Gaskelliana*, a large and finely-formed rose variety with ten flowers. Around it were *Cypripedium* × *Shillanum*, *C. x macropterum*, *C. x gigas* Corndean variety, *Cattleya Gaskelliana* alba, *C. Harrisoniana* alba, *Laelio-Cattleya* × *Canhamiana* varieties; *Dendrobium* × *rhodostoma*, *Aerides expansum* Leonæ, a selection of varieties of *Phalenopsis Aphrodite*, and a plant of the pretty little *P. amethystina*; *Odontoglossum Schlieperianum citrinum*, of two shades of yellow, the singular *Bulbophyllum Sanderianum*, and nice specimens of the rosy-lilac *Disa* × *Langleyensis*.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), sent *Cattleya Gaskelliana* Rosslyn variety, a very large and finely-formed rose-tinted flower, and *C. Warscewiczii* Rosslyn variety (see Awards).

J. FOSTER ALCOCK, Esq., Northchurch, Berkhamstead, showed *Cypripedium* × *Gloriana* (*Harrisoniana* superbum × *niveum*), a model flower with whitish ground colour effectively tinted with purplish rose.

R. BRIGGS-BURY, Esq., Bank House, Accrington (gr. Mr. Wilkinson), showed *Cypripedium Lawrenceanum*

Hyeannum Bank House variety, a large green-and-white flower with a slight brownish tint on the lip; and *Odontoglossum crispum* Oakfield Sunrise (see Awards).

CONTINENTAL EXHIBITS.

Mr. OTTO BEYRODT, Marienfelde, Berlin, staged a very bright group of excellent varieties of *Cattleya Warscewiczii*, of which the beautiful pure white *C. W. Fran Melanie* Beyrodt secured a First-class Certificate. Mr. BEYRODT also showed the rare natural hybrid *Odontoglossum* × *Brandtie*, and the clear yellow *O. Schlieperianum* Beyrodt's variety.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, staged an interesting group of his hybrid *Odontoglossums*, including *O. x ardentissimum* Cybele and *Eclair*, two very pretty rose-purple blotched forms; *O. x Rolfes* Melpomene and *L'Aurore*, two very large and handsomely-formed white varieties prettily spotted with purple; *O. x bellatulum*, and other hybrids.

M. JULES HYE DE CROM, Coupure, Ghent (gr., Mr. Coen), showed a gigantic white *Miltonia vexillaria* splendidly grown, and which bore two strong spikes; and a very large and finely-marked *Odontoglossum* × *Rolfes*.

Awards.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya × *Hy. Greenwood* var. *Imperator*, from Messrs. SANDER & SONS, St. Albans.—A gigantic form of the type, and an improvement in every respect. Inflorescence four-flowered. Sepals and petals broad, white tinged with purple. Lip very showy, purple in front, pale yellow in the throat.

Odontoglossum crispum Oakfield Sunrise, from R. BRIGGS-BURY, Esq., Bank House, Accrington (gr., Mr. Wilkinson). A very singular form in which the stalked petals have traces of the labellum and are of a reddish-chestnut colour, tipped with white. It received an Award of Merit, March 13, 1900, and was illustrated in the *Gardeners' Chronicle*, March 24, 1900, p. 181. As now shown there was much more colour on the petals.

Cattleya Warscewiczii Frau Melanie Beyrodt, from Mr. OTTO BEYRODT, Marienfelde, Berlin.—A most beautiful form with pure white flowers, the front of the lip being bright purple. In this form the yellow usually seen on the lip of other forms has almost disappeared, and an albino, with the exception of the purple on the front of the lip, resulted.

AWARDS OF MERIT.

Cattleya Warscewiczii, Rosslyn variety, from H. T. PITT, Esq. (gr., Mr. Thurgood).—A very handsome flower, white, delicately tinted with rose-pink, the darker colours of the type being suppressed.

Cattleya × *triumphans* (*Dowiana aurea* × *Rex*), from Messrs. SANDER & SONS.—A very pretty flower, resembling most nearly the rare *C. Rex*, and with pure white sepals and petals. The labellum is formed like that of *C. Rex*, but broader and more crimped. The throat, however, has the same prismatic arrangement of purplish-crimson colour, merging into the bright mauve-purple front lobe, the fringed margin of which is white.

Laelia × *crispa-brosa* (*crispa* × *tenebrosa*), from Messrs. SANDER & SONS.—A distinct hybrid, with flesh-coloured sepals and petals, and broad rose-coloured lip with dark purple veining (Botanical Certificate).

Saccolabium longicaulestratum, from Messrs. SANDER & SONS.—An interesting species with whitish, rose-tinted flowers closely arranged, and prominent large white spur.

Dendrobium bellatulum, from Messrs. SANDER & SONS.—A dwarf nigro-hirsute species, described in the *Gardeners' Chronicle*, April 2, p. 258. Flowers ivory-white with red markings on the labellum.

Floral Committee.

Present: H. B. May, Esq., in the chair; and Messrs. W. Bain, Geo. Nicholson, Ed. Mawley, A. Perry, C. R. Fielder, H. J. Cutbush, W. Howe, C. Blick, C. J. Salter, J. Jennings, J. F. McLeod, C. T. Drury, G. Renthe, E. H. Jenkins, Geo. Paul, J. W. Barr, Chas. Jeffries, W. J. James, Jno. Green, W. P. Thomson, R. C. Notcutt, W. G. Baker, R. Wilson Ker, W. Marshall, R. Hooper Pearson, and James Walker.

ROSES.

Messrs. G. PAUL & SON, Old Nurseries, Cheshunt, had a group of Roses beautifully arranged, chiefly of the decorative sorts, but also included good blooms of all types, the tall plants of the Rambler type, among which were large bunches of cut blooms lightly

arranged, made a bright effect. The group was well "finished" and the ground was covered without being crowded (Sherwood Cup).

On the opposite corner Mr. G. MOUNT, Canterbury, had a fine group, the Crimson Ramblers being very good; large bunches of Caroline Testout, Mrs. W. J. Grant, Fisher Holmes, Frau Karl Druschki, Hon. Edith Gifford, and other good sorts were prominent. Altogether a beautiful arrangement. Mr. GEO. MOUNT also showed some most charming Roses—vases, boxes, and pots, all containing grand specimens of these lovely flowers. A box of flowers of Mildred Grant was superb; Mrs. W. J. Grant was also in fine condition.

Messrs. B. R. CANT & SONS, The Old Rose Nurseries, Colchester, exhibited a fine lot of Roses, in which Blush Rambler was excellent. It had evidently been taken from a plant growing just as vigorously as the Crimson Rambler is wont to do. A good number of exhibition varieties was also shown.

Mr. DAVID RUSSELL, Essex Nurseries, Brentwood, Essex, staged several exhibition boxes of Roses with vases of pillar and polyantha varieties at the back. Some very fine blooms were noticed. The same exhibitor showed fifty-six varieties of Sweet Peas in vases, including the new variety Countess.

Mr. G. W. PIPER, Uckfield, Sussex, showed a small collection of Roses, including a new climbing polyantha variety, Aceitana. The flowers are light pink with a lighter centre, evidently a very prolific variety. Sunrise is a charming button-hole Rose.

Messrs. ALEX. DICKSON & SONS, Ltd., Newtownards, Co. Down, staged vases of single Roses, Irish Masterpiece, being a large-flowered variety of this section with rosy-coloured petals. Irish Elegance and Irish Star, two new varieties, were included. Messrs. DICKSON also presented some new hybrid Tea varieties.

Messrs. GEO. JACKMAN & SON, Woking, Surrey, set up a fine collection of hardy cut flowers, also Roses in boxes and vases. A good batch of Iris Kämpferi was noticed, also Nymphaeas and some good forms of Delphiniums. The Roses included garden varieties, also Teas and hybrid Teas. Bessie Brown, a hybrid Tea, was especially fine.

BEGONIAS, &c.

Messrs. BLACKMORE & LANGDON, Twerton Nurseries, near Bath, showed a magnificent group of tuberous-rooted Begonias, which consisted wholly of double-flowered varieties, all of which were of the highest merit. The Right Hon. Joseph Chamberlain (deep crimson), Mrs. Heathcote (yellow), Mrs. A. Hall (clear bright salmon colour), Marella (white, with pink, pectee-like edge), Marchioness of Bath (white), and Mrs. Portman Dalton (glorious pink colour, extra fine petals, like those of a beautiful Rose), were some of the most attractive flowers.

Messrs. T. S. WARE (1902), LTD., Feltham, had a group of Begonias, in which the double-flowered white variety Mary Pope was given especial prominence, there being a number of plants arranged in the centre. Other good double flowers were Queen Alexandra (of a pale tint, with bright red, pectee-edge to the petals), Mrs. W. L. Ainslie (yellow), Mr. W. G. Valentine (pale lemon colour), &c.

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, showed very choice Begonias, including single and double-flowered varieties. One of these is described under Awards. There were also Mr. J. Portbury (bright red colour), John Peed (rich salmon-red), Cupid (pink), all double, and Goliath (orange-coloured single).

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of tuberous-rooted Begonias, in which single and double-flowered varieties were about evenly balanced in number.

Messrs. B. R. DAVIS & SONS, Yeovil, Somerset, set up a large group of tuberous-rooting Begonias. Edging plants of Nepeta, Ferns, Panicum, &c., gave a pretty finish. Some very handsome flowers were shown in this collection, borne on well-grown plants in 6-inch pots. Several new varieties were included.

Messrs. H. CANNELL & SONS, Swanley, Kent, set up a group of Begonias, all of single tuberous-rooting varieties, in numerous shades of colours, some of the flowers being over 7 inches across. Humea elegans and suitable-sized Palms at the back, with a row of Echeveria farinosa, pleasingly set off this showy group.

A large exhibit of Sweet Peas, Pelargoniums, and tuberous-rooting Begonias was displayed by Mr. H. J. JONES, Ryecroft Nursery, Lewisham, all in first-class style, and displayed in good taste. The collection of

Sweet Peas was very comprehensive and charming. glass vases being used for their display. The exhibit of Pelargoniums was also first-class, and included most of the finer varieties.

FLORAL DECORATIONS.

The only exhibit in a special class for three bowls of flowers was one from Mr. CHAS. RUSSELL, florist, Pembroke Square, Kensington. The vases were filled with Iceland Poppies, Lilies, and Roses respectively; and although the bowl of Liliuns was of excellent effect and quality, that of the Poppies was meagre, and the colours did not harmonise with the blue Centaureas used; while the Roses were poor in quality, and arranged in too crowded a manner. 2nd prize was awarded, mainly for the boldness and grouping of the Lilies, the flowers of which should have been shown naturally, but the anthers had been removed.

HARDY FLOWERS.

Mr. AMOS PERRY, Winchmore Hill Nurseries, London, N., exhibited a very extensive group of cut flowers of hardy plants, apparently of most species now in flower. Mr. Perry had also an illustration of a water garden, in which were shown flowers and leaves of most of the best Nymphaeas, and in other vessels the water Hyacinth in flower, and other species suitable for cultivation in water.

Messrs. GEO. BUNYARD & CO., Royal Nurseries, Maidstone, exhibited a collection of hardy flowers, including some of the most showy species now in flower. Schœnia Cassiniana, which is not quite hardy, was exhibited in flower in a pan.

Messrs. T. S. WARE, Ltd., Feltham, Middlesex, showed a large quantity of cut hardy flowers. Many fine and meritorious flowers were included, Romneya Coulteri, Campanula pelviformis, Clematis erecta, &c.

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, set up a group of hardy plants. The plants were staged on the ground in the centre of a tent, and the members, being arranged in a representative manner, gave a pretty effect. Iris Kämpferi, a fine display of Liliuns, including a good batch of L. Henryi and L. excelsum, Eremurus Bungei, and the hybrid form Shelford (E. Bungei x Olgae), were especially noted. The interesting annual, Campanula macrostyla, was shown well, its Petunia-like flower and torpedo-like style and marbled petals being most interesting.

T. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegge), in his collection not only presented a charming and comprehensive collection of flowers, but demonstrated the proper manner in which to display these to the best advantage. Staged on a white table-ground in vases and épergnes, each group of flowers was arranged without overcrowding.

Mr. M. PRICHARD, Christchurch, Hants, exhibited some excellent hardy cut flowers; Iris Kämpferi were a feature, Spiraea palmata was good, also Gladioli.

Another fine group of hardy cut flowers came from Mr. B. Ladhams, Shirley Nurseries, near Southampton. Gaillardias were shown well; Scabiosa caucasica, Pentstemon Newbury Gem, Hemerocallis aurantiaca major, and Platycodon alba were good.

SWEET PEAS, VIOLAS, &c.

Mr. C. W. BREADMORE, Nurseryman, Winchester, exhibited some strongly-grown Sweet Peas, including some new varieties which were shown before the Committee for Certificate, but no awards were made.

Messrs. J. K. KING & SONS, Coggeshall, Essex, also showed bunches of Sweet Peas, &c.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, made an exhibit of Sweet Peas, and a number of hardy border plants were represented by cut flowers.

Messrs. T. WARE, Ltd., Feltham, Middlesex, showed a fine collection of Pinks, Sweet Peas, and Roses. The Sweet Peas were arranged with good taste, fancy Bamboo vases being utilised for the purpose.

Messrs. DOBBIE & CO., Rothesay, exhibited Sweet Peas, Violas, Pansies, and Cactus Dahlias. The Sweet Peas, charmingly displayed in vases, with colours well intermingled, made a very pretty group, Countess Spencer, Marchioness of Cholmondeley, and Mrs. H. K. Barnes being included. The Pansies and Violas included many meritorious varieties, the black staging used throwing them well into relief.

Some flowers of a new Sweet Pea, "Gladys Unwin," were exhibited by Mr. WM. J. UNWIN. The variety strongly resembles Countess Spencer.

CARNATIONS.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, Surrey, showed some of his specialties in Carnations,

all border varieties save three kinds of Souvenir de la Malmaison. The others included Kaffir (dark crimson), The Dawn (rosy-pink), Trojan (pure white). Several varieties are described under "Awards."

Messrs. D. S. WILLIAMS & SON, Upper Holloway, London, staged some choice varieties of Carnations in pots, principally Malmaison varieties, Princess of Wales, Mrs. Trelawney, Mrs. H. J. Jones, being some of the finer varieties displayed. A few border varieties were arranged at the back.

A very fine exhibit was set up by Messrs. CUTBUSH & SON, Highgate, N., the display occupying the whole of one of the side tables in Tent 4. The collection was arranged in first-class style, and the flowers and plants were shown in splendid order. A collection of Carnations in vases was a prominent feature, these pleasing flowers being displayed in a highly decorative manner. A Bamboo épergne of Malmaison "Princess of Wales" was handsome, the blooms themselves being highly creditable. Climbing Roses in pots, Verbenas, Ericas, Boronias, Lantanas, Hydrangeas, &c., suitably interspersed with foliage plants, completed a very choice display. Lantanas "Barnet Heliotrope" and "Barnet Bronze" are both pleasing varieties of this useful greenhouse flower. Messrs. Cutbush also set up a group of herbaceous flowers.

Messrs. GEO. BOYES & CO., Aylestone Nurseries, Leicester, showed a group of Carnations, also a number of cut flowers arranged in glasses.

FERNS.

Mr. H. B. MAY's group, from Dyson's Road Nurseries, Upper Edmonton, extended nearly the whole length of one side of the centre stage of the large tent, the space being filled with choice plants. The collection consisted of upwards of 250 species and varieties, many of them being shown in large specimens. Among the most prominent were Polypodium Mayi, which is a variety of P. sporodocarpum, and one of the most beautiful garden varieties we have, but like others with plumose fronds, it does not produce spores, and consequently will never become very plentiful; Pteris Summersi, another remarkably beautiful plumose form; Nephrolepis Piersoni, which seems to improve under culture, and may be easily increased from the spreading rhizomes; Adiantum Farleyense, in splendid condition; many Davallias in large specimens; D. fijiensis and its varieties robusta, elegans, and magnifica; Platycerium Willinkii, and athiopium; Polypodium Schneideri, P. hirsutum, P. crassinervium, P. phymatodes cristata, P. quercifolium, and several pretty small-fronded, spreading sorts, grown on moss-covered stems, of these P. vacciniifolium, P. salicifolium, P. squamulosum, P. lycopodioides, and P. vacciniifolium album (with pretty little silvery-grey fronds on woolly rhizomes); Pteris tricolor, P. flabellata, P. ludens, and others of the Doryopteris group. Aspleniums were well represented, including A. Mayi, A. grandis, and other varieties which came from A. pterioides, A. radicans, A. caudatum, A. nobilis, and others; Gymnogrammas, the best gold and silver varieties, and choice Adiantums.

Messrs. HILL & SONS, Lower Edmonton, exhibited a group occupying a large space on the ground, and some of the choicer small plants were partially hidden. The background was made up of large specimens of Dicksonias, Polypodiums, Davallias, Todeas, Nephrolepis Fosteri, and others on cork stems. In the foreground a great variety of shades in colour were seen, though not so many of the red-tinted sorts as we sometimes see. The soft, pale-green fronds of Asplenium marginatum contrasted well with the deep green of Lomaria procer. Lomaria L'Herminieri with bright red-tinted fronds; L. attenuata, of a soft pink hue; Nephrodium erythrosorum, Leucostagia immersa, Nothochlana sinuata, Pteris Regine and P. R. cristata, Gymnogrammas (gold and silver), Gleichenia Mendii, G. dicarpa longipinnata, and G. flabellata, all showed various shades; Lygodium dichotomum, Brainea insignis, Onychium auratum, Polypodium Meyerianum, Davallia Veitchii, D. repens, Pteris Childsi, Lindsaya retusa, Adiantum Veitchii, and others, the whole forming a most attractive group. When we see what a beautiful effect can be produced with Ferns, it seems remarkable that choice collections are not more frequently seen.

FINE FOLIAGE AND OTHER INDOOR PLANTS.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a group of flowering and foliage plants arranged in the large tent. It was certainly one of the finest groups we have seen. One of the best features was the fine baskets of Nepenthes standing up on pedestals above the other

plants; *N. Mastersiana*, *N. Burkei* excellens, *N. mixta*, *N. Curtisii* superba, *N. Amesiana*, and others, all having very fine pitchers. Large plants of *Alocasias* of several sorts; *Phyllotanium Lindeni*, *Maranta Sanderiana*, *Dracena Victoria*, *Coccoloba pubescens*; tall

divide the brighter colours. In the foreground [were some good plants of *Tillandsia zebrina* with long flower-spathes of bright scarlet. The whole group was well finished off, with almost every plant showing to advantage.

A. Veitchii and *gracillima*, *Ficus Parcelli* in well grown plants, *Jacaranda mimosaefolia* and *J. Clauseniana*, fine specimens of *Dracena Victoria*, and many other choice species made up a light and effective group. Mention should be made of a large bunch of



FIG. 20.—*FURCRAEA LONGEVA*.

Grown in Mr. Dorrien Smith's Garden at Tresco Abbey, Scilly, and exhibited by him at the Holland House Show. (See p. 46.)

plants of *Codiaeum Warreni*, *Nestor*, &c., were effectively used. *Caladiums* included some highly-coloured sorts—*La Lorraine*, *Lady Moseley*, *Baroness Schroder*, and *Rio de Janeiro* being very good. In the centre of the group were some well-flowered greenhouse *Rhododendrons*, and *Carnations*, including "*Malmansons*" and border varieties. *Canas* were another bright feature. In the background were *Lilium Henryi* standing up among tall *Cocos flexuosa*. Some choice *Ferns* were used to

Messrs. W. BULL & SONS, King's Road, Chelsea, had an effective group of foliage plants. Tall specimens of *Dicksonia antarctica* and other Tree *Ferns* with *Palms* in the background, *Davidsonia pruriens*, a most effective plant with large, pinnate leaves, the long oval pinnae serrated, the young leaves of a soft bronzy-brown; *Caladiums* of the brightest sorts, *Codiaeums*, including *Flamingo*, *Reidi*, *Emperor Alexander*, *Cheloni*, and others; *Aralia elegantissima*,

the beautiful *Bougainvillea Maud Chettleburgh*, the finest of this genus.

Messrs. F. SANDER & Co., St. Albans, made a fine display of foliage and flowering plants. *Nicotiana Sanderae* was well shown, many of the plants having flowers of a more pleasing shade of colour than when first exhibited. It is an effective plant in groups, but its value will be most appreciated for planting in the open ground. *Marguerite Queen Alexandra* was shown

as an improvement on 'Coronation,' the flowers being better filled with quilled florets in the centre. *Begonia Bowringiana*, a very distinct variety, the woolly leaf stalks and under sides of the leaves of a rich crimson, the surface deep green with a lighter zone; *Begonias* Our Queen, His Majesty, Mrs. H. G. Moon, and other good hybrids of the Rex type; *Asparagus Sprengeri variegata*, *A. myriocladus*, *Pandanus Sanderi* (a fine specimen with long leaves regularly striped with yellow), a grand specimen of *Polypodium Knightiae* with very long feathery drooping fronds, *Heliconia Edwardus Rex* (a very large specimen), *Ficus pandurata*, *Phoenix Roebelinii*, *Furcraea Watsoniana*, *Araucaria Rex*, *Vriesia Forgetiana*, &c.

Mr. RUSSELL, Richmond Nurseries, Surrey, filled one large corner space with a beautiful lot of bright foliage. *Codiaeums* were a feature, and included fine plants of *Golden Ring*, *Warreni*, *Aigburth Gem*, *Reidii Adonis*, and well-coloured plants of the old favourite *angustifolia*; *Alocasia macrorrhiza variegata*, *A. mortefontaineensis*, and other large-leaved sorts, *Maranta zebrina*, *Dracena Victoria*, *D. Sanderiana*, *Ananassa sativa variegata*, well-coloured *Caladiums*, with tall Palms and some fine specimens of *Cordylina Russelliana*, the dark bronzy foliage of which contrasted well with the brighter hues.

Messrs. R. & G. CUTHBERT, Southgate, put up a large and effective group. *Lilium auratum*, *L. longiflorum*, *L. lancifolium*, and *L. tigrinum* were well shown; *Crassula coccinea* arranged in the centre was very bright; several good sorts of Ivy-leaved *Pelargoniums*, *Beauty*, *Supreme* (a fine pink variety), *Her Majesty*, *Incomparabilis* (a fine scarlet), and others; *Tuberose*s, tall plants of *Hydrangea paniculata grandiflora*, arranged among *Cocos flexuosa*, made a good background.

Mr. ICETON, of Putney, had a group, in which were retained *Ghent Azaleas* and *Lily-of-the-Valley*, *Lilium auratum*, *L. longiflorum*, arranged with foliage, *Bambusa Simoni variegata*, *Cocos flexuosa*, *Eurya latifolia variegata*, *Caladiums*, and other foliage plants.

Messrs. PEED & SON, West Norwood, put up a large group of *Caladiums* arranged with Ferns; the bright colours showed up well. The varieties were of the best and brightest Rio de Janeiro, Mrs. J. Peed, Silver Queen, Madame Léon Say, and many others were worthy of note.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, had a group of *Caladiums*, composed of a considerable number of plants of moderate size, exhibiting a number of varieties.

Mr. W. WELLS, Ranelagh Nurseries, Leamington Spa, exhibited a group of plants, in which *Asparagus myriocladus*, *Codiaeums*, and other foliage plants were included.

Mr. R. ANKER, agent for FRANZ DE LAËT, Contich Les Anvers, Belgium, exhibited a group of miniature and other succulent plants, also some plants of the dwarf-growing *Nertera depressa*, well covered with its scarlet fruits.

Messrs. JAMES VEITCH & SONS, in addition to other things, exhibited a group of plants which included *Lobelia tenuior*, *Fuchsia Sylvia*, a very effective variety with a double white corolla and brilliant red calyx; *Streptocarpus achimenesiflorus albus*; *Rehmannia angulata* in flower, &c.

Messrs. J. & W. BROWN, Stamford and Peterborough, exhibited a group of greenhouse plants in which *Verbenas* Scarlet King and Miss Willmott, also *Fire Dragon* and several new varieties of *Cactus*-flowering *Pelargonium* were conspicuous.

Mr. H. B. MAY, in addition to Ferns, showed a good collection of zonal and Ivy-leaved *Pelargoniums* in pots. The plants were all well flowered, and included the most useful sorts for market work. *Blanche* (white), *Lord Kitchener* (crimson), *Lady Dorington* (pink), Mrs. H. Stedall (deep salmon), *Princess Charles* of Denmark, and *Gustave Larsen* were specially worthy of note.

Messrs. JOHN PEED & SON, West Norwood, London, showed *Gloxinias*, which, considering the lateness of the season, were highly creditable.

Mr. VINCENT SLADE, Taunton, Somerset, set up a collection of Zonal *Pelargonium* bloom in vases, together with some of the Ivy-leaved section. They were displayed on a white table ground with small Ferns worked in the group.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, furnished one corner of tent No. 4 with a group of *Hydrangea Hortensia*, some large Palms at the back being used for effect.

MISCELLANEOUS.

Messrs. REAMSBOTTOM & CO., Geashill, King's County, Ireland, brought a collection of *Anemones*, including a large batch of King of Scarlets and The Bride. The single Irish *Anemones* were very charming, reminding one of gorgeous Poppies.

Miss WILLMOTT, Great Warley, Brentwood, staged a number of plants of *Verbena* "Warley Scarlet," a variety eminently suitable for bedding purposes.

Messrs. WM. BULL & SONS, Chelsea, staged a collection of *Gladioli* and baskets of white Brighton Gem *Pelargoniums*.

A group of hardy *Nymphaeas* in pans was shown by L. CURRIE, Esq. (gr. Mr. Profit), Muley Manor, Farnborough, Hants. The beautiful bluish shades on many of these handsome if somewhat stiff flowers were delightful.

GROUPS ARRANGED IN THE OPEN.

Messrs. JAMES VEITCH & SONS, Chelsea, brought a number of well-grown plants of *Sciadopitys verticillata* in tubs, arranging a number of pot plants of *Campanula peregrina* as a frontage for the collection, and thereby partly destroying the effect of the handsome *Sciadopitys*.

Mr. DAVID RUSSELL, Brentwood, staged a large group of ornamental foliage plants, *Acers*, *Aralias*, *Retinospora plumosa* in variety, *Hollies*, arborescent *Ivies*, *Golden Yews*, and other ornamental *Conifers*, &c.

Mr. L. R. RUSSELL, Richmond, staged a group of tree *Ivies* of various types, including gold and silver-leaved varieties, &c., most of the arborescent forms of this plant being included.

Messrs. W. FROMOW & SONS, Chiswick, W., had a well-arranged group of ornamental foliage hardy plants. Several tall hardy *Bamboos* were arranged at the back, standards of other members being worked among the group. The groundwork was comprised mainly of Japanese *Maples*, &c.

A very fine group of similar plants was set up by Messrs. THOS. CRIPPS & SONS, Tunbridge Wells, Kent, whose collection included some handsome types of Japanese *Maples*, *Vitis* species, *Ivies*, fancy *Oaks*, *Conifers*, &c.

A showy group of *Phlox decussata* was set up by Mr. JOHN FORBES, Hawick, some giant forms of *Pentstemon* and some good spikes of *Delphiniums*. A crimson *Pentstemon* was noticed named *Crimson Gem*. Lord Kitchener, Albert Edward, and Eugène Sandow are good forms of *Delphiniums*.

AWARDS MADE BY THE FLORAL COMMITTEE

Alpinia Sanderi.—This is a first-class variegated variety, of excellent effect when as freely variegated as the plants shown by Messrs. SANDER & CO. (see fig. in Supplement to *Gardeners' Chronicle*, April 18, 1903) (First-class Certificate).

Astilbe "alba" and "rosca".—One of the finest features of the show was a group of a dozen or so plants of *Spirea* shown by Gv. VAN WAVEREN & KRUIJFF, of Haarlem, Holland. There were two varieties, one having white flowers (said to have been obtained from a cross between *Astilbe* × *Lemoinei* × *Spirea compacta*), and the other rich pink-coloured flowers (said to have been obtained from crossing *Spirea compacta* with *Astilbe chinensis*). The plants were from 2 to 3 feet high, and bore strong inflorescences of showy flowers, much superior to anything previously seen in *Spireas*. The pink flowered variety appeared to be just as strong-growing as the white variety. The Floral Committee recommended the award of a Gold Medal for these plants.

Begonia Canopus.—A double flower of rich yellow colour and large size. Shown by Messrs. B. R. DAVIS & SONS, Yeovil (Award of Merit).

Begonia Margaret Gwillim.—A large double flower of rich yellow colour. Shown by Mr. A. LL. GWILLIM (Award of Merit).

Carnation Glow-worm.—A border variety with bright scarlet flowers, of good form, and possessing non-splitting calices. Shown by Mr. JAS. DOUGLAS, Bookham (Award of Merit).

Carnation King Solomon.—A border variety of considerable distinctness. The colours are purple, red and cream, being thus a "fancy." Shown by Mr. DOUGLAS (Award of Merit).

Carnation Lady Linlithgow.—Apparently a border variety of rich rose colour, approaching to cerise. The flowers have large, smooth petals, only slightly fragrant. Shown by Mr. MARTIN R. SMITH (Award of Merit).

Furcraea longera (see fig. 20, p. 45).—A magnificent inflorescence of this Mexican species of *Amaryllidaceae* was shown by Mr. DORRIEN SMITH, Treco Abbey,

Scilly Isles. The inflorescence was 10 or 12 feet high, and there are few localities in Britain where the species would succeed. The Floral Committee awarded a Gold Medal. We have a photograph of this, or a closely allied species, grown under glass by Mr. Mullins, of Eastnor Castle Gardens.

Glaucium flavum tricolor, a brownish-crimson variety of the Horn Poppy, with chocolate mark at base of each petal.—Shown by Messrs. WALLACE & CO. (Award of Merit).

Rose "C. J. Graham".—A new hybrid Tea Rose of deep crimson colour, and therefore a welcome addition to this section (Award of Merit).

Rose "Countess Annesley".—A new hybrid Tea Rose of beautiful pink colour, and broad, good petals (Award of Merit).

Rose Duchess of Westminster.—This variety has large flowers which open a rich rose colour, and become paler, being then of a tint similar to that of *La France* (Award of Merit). The three varieties enumerated above were shown by Messrs. ALEX. DICKSON & SONS.

Rose "Mrs. F. W. Flight".—This is another "pink Rambler." The flowers are of large size, pink with white centre, produced in enormous trusses. Mr. F. W. FLIGHT, Cornstiles, Twyford, Hants (Award of Merit).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. W. Bates, Geo. Reynolds, W. Poupert, W. H. Divers, H. Parr, A. H. Pearson, G. Norman, W. Fyfe, S. Mortimer, Geo. Woodward, G. T. Miles, J. Willard, J. Jaques, Geo. Kelf, Jas. Gibson, H. Balderson, F. Q. Lane, Jas. Cheal, R. L. Castle, and W. Pope.

Whilst the exhibits of fruits were comparatively few, yet they were generally very good. The best without doubt was that staged at one end of a long tent by Messrs. G. BUNYARD & CO., The Old Nurseries, Maidstone. This comprised some twenty Apple and Cherry trees in pots and numerous dishes of fruit. The Apple trees in good fruit were chiefly *Emperor Alexander*. The Cherries included *Kirtland's Mammoth*, *Bigarreau Napoleon*, *Black Tartarian*, *Emperor Francis*, and others all well cropped. The dishes, of which there were twenty-four, included of black Cherries, *Noir de Schmidt* (very fine), *Werder's Early Black*, *Knight's Black*, *Bohemian Black*, *Bundell's Black Heart*, *Black Tartarian*, and *Turkey Heart*. The light-coloured fruits included *Bigarreau de Munster*, *Kentish Bigarreau*, *Early Amber*, *Frommore Bigarreau*, *Abbesse d'Oignies*, *Florence*, *Bigarreau Napoleon*, and others. There were also excellent samples of *Strawberries* *Eleanor*, *Givon's Late Prolific*, *Latest-of-All*, *Sir Joseph Paxton*, *Louis Gautier*, and *Dr. Hogg*. These dish fruits, especially the Cherries, proved to be exceedingly attractive.

H. PARTRIDGE, Esq., J.P., Bletchingley, Surrey (gr. J. W. Barks), set up a handsome collection of fruit inclusive of good *Black Hamburg*, *Buckland Sweet-water*, and fairly good *Foster's Seedling Grapes*; *Stanwick*, *Elruge Nectarines*, *Violette Hâtive* *Peaches*, *Royal Jubilee*, *Little Heath*, and *Royal Sovereign* *Melons*, and excellent samples of *Givon's Late Prolific Strawberry*, and *Raspberries*.

Messrs. JAS. VEITCH & SONS, Chelsea, had two large boxes of their fine new Strawberry *The Alake*, one to show sample, and one cropping qualities; also that fine variety *President Loubet*.

Mr. A. H. T. MONTMORENCY, Carrickmines, Dublin, had fine fruits of *Latest-of-All*, *Monarch*, and *President Strawberry*, but they somewhat lacked our usual English colour.

Messrs. LAXTON BROS., Bedford, had in very fine form their new variety *Laxton's Latest*, the product of a seedling from *Latest-of-All*.

From J. B. JOEL, Esq., Northaw House, Potters Bar (gr. Mr. J. May), came two boxes of superb fruits of *Waterloo Strawberry*.

The Duke of NORTHUMBERLAND (gr. Mr. W. C. Leach), sent from Albury, Guildford, samples of *Eleanor*, *Lord Napier* and *Waterloo Strawberries*, the latter being much the finest sample. From the HORTICULTURAL COLLEGE, Swanley, came Apples *Lady Sudeley* and *Beauty of Bath*, the latter well coloured; and a *Melon* *Swanley Hero*. Mr. WHITMORE, Birchwood Nursery, Swanley, sent fruits of new *Melons*; and from Mrs. HOLT (gr. J. Bundy) came a few fruits of *Passiflora edulis*.

The only vegetables seen were two dishes of a fine podded Pea, King's No. 1, shown by J. K. KING &

SONS, Coggeshall, Essex; and a dish of a handsome red Tomato, Lord Roberts.

Awards of Merit.

Raspberry "Champion." This was sent by Mr. G. BENWELL. Not only were there numerous dishes and baskets of the fruit, but canes (old and new) showing strong growth, and bearing out the statement that the plants continued to fruit for two months, were also staged. The fruits were the size and colour of Superlative, but more rounded in shape.

Strawberry "Laxton's Latest."—The fruits of this late-fruited variety are of large size, dark red colour, and good flavour (see remarks in last week's issue, p. 21). From Messrs. LAXTON BROS.

HORTICULTURAL APPLIANCES.

Mr. BENTLEY, of Hull, had in quantity his famous Insecticide, and Weed-Killer, with other things. VALLS & Co., Coleman Street, E.C., had their excellent Beetle-killer or insect-destroyer. H. STANLEY & Co., South Norwood, showed in this a solution termed Slug Death, a name which conveys its purpose.

The ANGLO-CONTINENTAL GUANO WORKS, Leadenhall Street, showed guanos, various other manures, and sundries.

Mr. H. PATTISON, Streatham, S.W., had horse-shoes for lawn-mowing, the merits of which have now been well tested. D. DOWEL & SON, Hammersmith, had pots for Orchid-culture, and other forms of pottery.

Messrs. CORRY & Co., Finsbury Street, London, had a long stand, including numerous manure samples, Niquas Insecticide, Lethorion, and various other articles. Mr. J. GEORGE, Putney, had Mushroom-spawn, peat samples, manures, nicotine fumigators, &c.

W. POORE & SONS, Cheapside, London, had an exhibit of hot-air and hot-water heating apparatus for amateurs' greenhouses.

Messrs. JOHN FELS & Co., Berkhamstead, showed plant and tree stakes, mallets, and other useful objects.

The excellent Four Oaks undentable syringes from Sutton Coldfield were in strong force; and very interesting were the knapsack and hand-sprayers, with other objects, shown by DE LUZY FRÈRES, of Camberwell.

The well-known tree and plant tubs of diverse shapes and sizes shown by Messrs. CHAMPION & Co., City Road, E.C., were there; as also was a big collection of sundries, pottery, syringes, tools, and other things, staged by Messrs. OSMAN & Co., Commercial Street, London.

W. HERBERT & Co., Hop Exchange, London, showed samples of peat, labels, sprayers, and manures.

Messrs. WOOD & SON, Wood Green, N., had a remarkably complete collection of sundries, ranging from 20 feet Bamboo rods down to the smallest thing needed in a garden; also soils, fertilisers, baskets, and a myriad of other things.

Messrs. FENLON, Whitefriars, London, had excellent heating apparatuses, especially for small greenhouses and halls, also other useful contrivances.

Mr. J. PINCHES, Camberwell, had a large sample of his imperishable Acme plant and tree labels.

Messrs. DOULTON & SONS, Lambeth, had flower vases, garden and hall pottery, edging tiles, and other things.

Messrs. PULHAM & SON, Newman Street, W., showed a pretty piece of miniature rockwork artistically planted, and also admirable garden vases and seats.

T. DYER & Co., Finsbury, E.C., showed ladders, tools, benches, and much of mechanical interest.

Messrs. H. CASTLE & SONS, Milbank, London, had numerous garden seats in various patterns, made from the teak of old war ships, which are very durable.

Mr. G. W. RILEY, Norwood Road, Herne Hill, sent a dozen of garden summer-houses or arbours of rustic patterns, all diverse, and exhibiting great excellence in construction.

AWARDS MADE BY THE COUNCIL.

GOLD MEDAL.

Jas. Veitch & Sons, Chelsea, for Stove, Greenhouse, Hardy, and Flowering Plants.

Sander & Sons, St. Albans, for Orchids.

Dorrien Smith, Esq., for *Furcraea longeva*.

T. Cripps & Sons, Tunbridge Wells, for Acers and Hardy Plants.

A. Dickson & Sons, Newtownards, for Roses.

Blackmore & Langdon, for Begonias.

Messrs. Waverin, for Astilbes.

SHERWOOD CUP.

1st, Paul & Son, Cheshunt, for Roses.
2nd, G. Mount, Canterbury, for Roses.

SILVER CUP.

H. B. May, Edmonton, for Ferns and Flowering Plants.

L. R. Russell, Richmond, for Trees, Shrubs, &c.

G. Bunyard & Co., for Herbaceous Flowers and Fruits.

T. S. Ware, Ltd., for Alpines and Herbaceous Flowers.

W. Cutbush & Sons, for Carnations, Irises, &c.

J. Peed & Son, for Gloxinias and Caladiums.

R. Wallace & Co., for Herbaceous and Bulbous Plants.

Amos Perry, for Herbaceous Plants, &c.

Charlesworth & Co., for Orchids.

John Bradshaw, Esq., for Hardy Plants and Flowers.

H. J. Jones, for Sweet Peas, &c.

J. Laing & Sons, for Begonias.

J. Hill and Son, for Ferns.

J. Colman, for Orchids.

W. Bull & Son, for Stove and Greenhouse Plants.

M. Prichard, for Alpines and Hardy Flowers.

Laurence Currie, for Water-Lilies.

Barr & Sons, for Hardy Flowers and Pigmy Trees.

H. Partridge, Esq., for Fruit.

C. W. Breamore, for Sweet Peas.

SILVER-GILT FLORA MEDAL.

D. Russell, for Hardy Trees.

B. R. Cant & Sons, for Roses.

Dobbie & Co., for Pansies, &c.

C. Vuytsteke, for Orchids.

B. S. Williams & Son, for Gloxinias.

J. Jackman & Sons, for Roses and Herbaceous Plants.

Sir F. Wigan, for Orchids.

SILVER-GILT BANKSIAN MEDAL.

G. Reuthe, for Alpines, &c.

R. Farrer, for Alpines.

R. & G. Cuthbert, for Flowering Plants.

B. R. Davis & Sons, for Begonias.

SILVER FLORA MEDAL.

A. L. Gwillim, for Begonias.

H. Low & Co., for Orchids.

J. Cheal & Son, for Herbaceous Plants and Shrubs.

G. & A. Clark, Ltd., for Hardy Flowers.

SILVER BANKSIAN MEDAL.

J. Forbes (Hawick), for Hardy Flowers.

Jones & Son (Shrewsbury), for Sweet Peas, &c.

Fromow & Sons, for Hardy Trees.

Ladhams, Ltd., for Herbaceous Plants.

V. Slade, for Pelargoniums.

J. B. Joel, for Strawberries.

R. Anker, for Cacti.

Hobbies, Ltd., for Sweet Peas, &c.

HORTICULTURALSUNDRIES, IMPLEMENTS, &c.

SILVER-GILT FLORA MEDAL.

J. Bentley, Ltd., Chemical Works, Hull.

Pulham & Son, Newman Street, Oxford Street, W.

W. Wood & Son, Ltd., Wood Green, N.

G. W. Riley, Norwood Road, Herne Hill.

Osman & Co., 132, Commercial Street, E.

SILVER FLORA MEDAL.

H. Castle & Sons, Ltd., Baltic Wharf, Westminster.
The Anglo-Continental Guano Works, Leadenhall Street.

The Four Oaks Nursery and Garden Sundries Co., Sutton Coldfield.

Champion & Co., 115, City Road, E.C.

Doulton & Co., Ltd., Lambeth.

Fenlon & Son, Tudor Street, Whitefriars.

James George, Redgrave Road, Putney.

T. Syer & Co., 45, Wilson Street, Finsbury Street, E.C.

SILVER BANKSIAN MEDAL.

Valls & Co., 16, Coleman Street, E.C.

Corry & Co., Shad Thames, S.E.

De Luzy Frères, 99, Lilford Road, Camberwell, S.E.

D. Dowel & Son, Ravenscourt Avenue, Hammer-smith.

W. Herbert & Co., 2, Hop Exchange, S.E.

H. Pattison, Farm Avenue, Streatham, S.W.

R. Pinches, Crown Buildings, Camberwell.

BRONZE BANKSIAN MEDAL.

Wm. Poore & Co., 139, Cheapside, E.C.

DUTCH HORTICULTURAL AND BOTANICAL.

JUNE 15. At a meeting of the Floral Committee on the above date the Committee awarded First-class Certificates to *Lathyrus grandiflorus*, from Mr. B. RUYS, of Dedemsvaart; *Epiphronitis Veitchii*, a hybrid from *Epidendrum radicans* & *Sophranitis grandiflora*, from Mr. C. J. KKKERT, of Haarlem; *Rose Perle des Neiges*, from Mr. T. VAN DER WESSEL, of Elze, Holland. Certificates of Merit were awarded to *Heuchera sanguinea grandiflora*, from Mr. B. RUYS, of Dedemsvaart; *Meconopsis cambrica fl. pl.*, from Mr. B. RUYS, of Dedemsvaart; and *Gypsophila repens praecox*, from Messrs. VAN NAMED BROTHERS, of Zwijndrecht. The following plants gained an Honourable Mention: *Dianthus multiflorus*, from Mr. B. RUYS, of Dedemsvaart; *Odontoglossum crispum Trianae*, from Mr. C. J. KKKERT, of Haarlem; a collection of single *Anemone coronaria*, eighteen varieties, from Mr. P. W. VOET, of Overveen, near Haarlem; a collection of twelve varieties of *Heuchera*, from Messrs. WEZELENBURG & STASSEN, of Leyden.

MAIDSTONE ROSE SHOW.

JULY 4. The annual exhibition of the Maidstone Rose Society took place on the above date, in the gardens of "Somerfield," London Road. The show was in every way a great success. The blooms staged were above the average, both in quantity and quality, and competition was exceedingly keen.

Sir Marcus Samuel's Silver Cup was awarded Mr. WAKELEY for a splendid collection of twenty-four choice blooms; the National Rose Society's Silver Medal for the best Tea, Noisette, or Hybrid Tea Rose in the show was given to Mr. C. C. WILLIAMSON for a beautiful flower of *Lady Moya Beauchere*; while Ulrich Brunner, shown by Colonel PITT, secured the Society's Bronze Medal.

EALING HORTICULTURAL.

JULY 6. The annual exhibition of the above Society was held in the beautiful grounds of Gunnersbury Park on the above date, and was a great success. Cottage and Allotment Garden produce was a feature of the exhibition, the quality of the general exhibits was good, although not of the high standard of twenty years ago. There were two classes for groups, and the exhibits generally were neat and tasteful. Floral decorations filled one tent, the competitors being ladies. A fine group of plants from Gunnersbury Park was staged by Mr. GEO. REYNOLDS. Messrs. FROMOW & SON, Turnham Green; Mr. L. R. RUSSELL, Richmond, and some other local nurserymen contributed collections of plants. Roses were shown well, the Society's Silver Cup for twenty-four blooms being won by Mr. W. OWEN.

SOUTHAMPTON HORTICULTURAL.

JULY 6, 7. The annual summer exhibition was held on the Royal Pier, and was a success. The exhibits were more numerous in all sections, except fruit, than in any previous year. Groups of plants arranged for effect showed a distinct improvement. Roses and Sweet Peas were numerous and good, and vegetables were excellent, as they always are at Southampton.

PLANTS.

The principal class for plants was that for a central group of miscellaneous subjects, arranged for effect in a square space 10 feet by 8 feet. Five competed, making a nice display down the centre of the pavilion. The 1st prize was easily won by Mr. E. WILLS, The Nurseries, Winchester Road, Southampton. Mr. H. W. Hill, gr. to E. G. MERCER, Esq., Bassett, was 2nd.

For four specimens of stove or greenhouse plants, Mr. T. Hall (gr. to Sir S. MONTAGUE, Bart., M.P., South Stoneham House, Southampton) secured the leading award with medium-sized, freely-flowered plants; Mr. WILLS was 2nd. Mr. HILL also won 1st prize for four Ferns. Tuberous Begonias were well shown. Mr. Mitchell, gr. to J. WILLIS FLEMING, Esq., Chilworth Manor, Romsey, won 1st prize for double-flowered varieties.

ROSES.

The leading class was that for thirty-six blooms distinct. Messrs. D. PRIOR & SONS, Colchester, easily won 1st prize with large, fresh examples of popular varieties; Messrs. JARMAN & SONS, Chard, were 2nd. For twelve varieties, three blooms of each, Messrs. PRIOR were again successful; Messrs. JARMAN were 2nd. Messrs. PRIOR followed up their previous successes by winning 1st prize for twelve blooms of Tea or Noisette varieties; Messrs. JARMAN were 2nd.

For six blooms of any one dark variety Mr. G. H. Kent, gr. to Mrs. E. CROFT MURRAY, Mervale, Ryde, Isle of Wight, won with *Le Havre*. For a similar number of any one light variety, Mr. KENT was again successful with medium-sized, clean examples of *White Maman Cochet*.

In the following classes gentlemen's gardeners and amateurs only competed. For eighteen distinct blooms,

Mr. NEVILLE was 1st; and Mr. KENT, 2nd. For twelve blooms of 'Tea or Noisette' varieties, Mr. NEVILLE was again successful; and Mr. KENT, 2nd.

The most tastefully dressed vase of Roses came from Mr. MITCHELL, Chilworth; a similar honour falling to Miss MINNIE SNELLGROVE for a basket of Roses.

Sweet Peas were numerous and good. For nine bunches, Mr. C. W. BREADMORE, High Street, Winchester, won, with excellent flowers. Messrs. JARMAN & Co., Chard, were 2nd.

For Messrs. TOOGOOD's prizes for six bunches, Mr. J. M. SHEPPARD, Manor Farm, Swaythling, won 1st prize.

Mr. J. Matthews, gr. to Mrs. MALTRY, Botley, secured Mr. SYDENHAM's premier award for nine bunches; while Mr. J. Hughes, gr. to A. P. RALLI, Esq., Twyford, won that offered by Mr. C. W. BREADMORE for nine bunches.

Messrs. B. LADHAMS & Co., Shirley Nurseries, Southampton, had the best exhibit of twelve hardy border flowers; a like honour falling to Mr. G. Ellwood, gr. to W. H. MYERS, Esq., M.P., Swanmore Park, Bishop's Waltham, for nine bunches.

FRUIT AND VEGETABLES.

Fruit was staged in small quantity. Extra fine Strawberries came from Mr. MATTHEWS in the class for two dishes. Sir J. Paxton and Royal Sovereign were the varieties.

Vegetables were abundant. Mr. BECKETT, Aldenham House Gardens, Elstree, won both Messrs. Sutton & Sons' and Messrs. Toogood's prizes for six dishes with remarkably fine produce. Mr. Bowerman, gr. to Lord BOLTON, Hackwood Park, Basingstoke, was 2nd in each class; Mr. ELLWOOD coming next amongst twelve entries in the latter class.

TRADE EXHIBITS

were numerous. Gold Medals were awarded to Messrs. B. LADHAMS & Co. for hardy flowers, and to Messrs. TOOGOOD & SONS for Sweet Peas in pots and as cut flowers. Silver-gilt Medals to Mr. C. W. BREADMORE, Winchester, for Sweet Peas; and to Messrs. B. DAVIS & SONS, Yeovil, for tuberous Begonias. Silver Medals to Mr. ELLWOOD for three dozen bunches of garden Roses; to Mr. E. WILLS for wreaths, &c., and decorative plants; and to Messrs. JARMAN & Co. for Roses, &c. First-class Certificates were awarded to Mr. C. W. BREADMORE for Sweet Peas Reggie Breadmore, Douglas Breadmore, and Cyril Breadmore.

WANSTEAD AND LEYTONSTONE HORTICULTURAL.

JULY 7.—This Society held its thirty-eighth annual show on the above date in the grounds of The Warren, Wanstead. The number of exhibits was 560, an increase of 111 on last year. The competition in some classes, notably those for groups of plants and for table decorations, was very keen. The Gloxinias and Begonias exhibited by Mr. H. G. DAY (gr., Mr. W. Hammond) were remarkably fine, as were also Sweet Peas shown by Mr. W. JONES.

THE WOLVERHAMPTON FLORAL FETE.

JULY 12, 13, 14.—This show was held under favourable circumstances, and was very successful. The principal exhibitors were Messrs. Cypher & Sons, who had miscellaneous stove plants; Mr. John Robson, of Altrincham, who sent Malmesbury Carnations; Messrs. Webb, of Stourbridge, had a fine exhibit of Sweet Peas; Messrs. Dickson, of Chester, and Messrs. Jarman, of Chard, one of herbaceous plants. Begonias were shown by Mr. Davis, of Pershore. For Roses Messrs. Harkness & Co., of Hitchin, won the 1st prize for seventy-two, and also for forty-eight distinct varieties.

Exhibits and exhibitors were much the same as usual at large shows in the provinces. There were twelve more exhibitors and 150 more entries than last year. As showing the importance of this annual show, some idea of the numbers of visitors may be gathered from the fact that in 1901 the receipts amounted to £2,118, and in 1903 to £1,762. The judges included Messrs. Owen Thomas, A. MacKellar, W. Crump, J. Wright, N. F. Barnes, J. Deacon, Rev. J. H. Penoberton, R. Dean, W. Cuthbertson, P. Blair, J. Wallis, R. Cock, and A. Coombes.

GARDENERS' DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS'.—The first evening meeting of the summer session was held, by permission of Mrs. Harrison, at Shiplake Court. Between seventy and eighty members, accompanied by the President, Mr. Leonard Sutton, left Caversham Lock by steamer, and on reaching Shiplake were met by Mr. J. Hall, the head gardener, Mr. W. Barnes, Chairman of the Association, and other members who had journeyed by road from Bear Wood, Wokingham, Maidenhead, Henley, &c. A move was at once made to the kitchen-garden, the borders of which were gay

with Irises, Canterbury Bells, Delphiniums, and other perennials. The vegetables appeared remarkably well, especially Potatoes and Peas. In the vineries the crop of Grapes was a heavy one, and the bunches and berries were of fine size. The party wended its way to the pleasure-grounds and Rose-garden; the latter at this time of the year is a feature here, and many varieties of Roses flourish well. The annual outing will take place on Tuesday, July 19, and, by kind permission of Mrs. Lionel Phillips, a visit will be made to Tydney Hall.

LAW NOTES.

CLIBRAN v. BUCKLOW BOARD OF GUARDIANS.

AN important appeal against the poor-rate assessment of a packing-shed and nursery land was made at the Cheshire Quarter Sessions on June 29 by Mr. Clibran, nurseryman, of Hale. Owing to the pressure upon our space we are compelled to hold over the particulars of the case until our next issue, but it may be stated now, that in some measure the appeal was successful.

ENQUIRY.

MOORE'S VEGETABLE CREAM MARROW.—Can any reader inform "An Old Gardener" how long this variety has been in cultivation? [About thirty-eight years. Ed.]

ANSWERS TO CORRESPONDENTS.

APPLE: J. W. L. G. We are unable to name the Apple.

BEGONIA: New Reader. The leaves are affected with mite; spray with tobacco-water. The Grape has the spot disease. See answer to "A. L. G."

CAMELLIA: A. T. C. J. We suspect the flower-buds dropped in the winter, owing to the roots having suffered from drought on some occasion. This is a frequent cause of the buds dropping at that period.

CARNATIONS: J. E. H. There is no disease present. The cuttings have been badly rooted in the first instance, and the few roots present have been unable to support the plants during the rapid period of growth.

CLAIM FOR EXPENSES: F. G. B. 1, You have no claim; 2, the wages you asked seem to us fair.

CLEMATIS FLOWERS: T. C. Examples of median proliferation. See Masters, in the *Transactions of the Linnean Society*, Vol. xxiii, pp. 359 and 481.

CUCUMBER: E. A. Cucumber-spot, *Cercospora melonis*. Burn the affected plants. Turn out the soil, and start afresh in a new house. If you cannot do this, spray the plants with 2 oz. liver-of-sulphur to 3 gallons of water, to which 2 oz. of soft-soap are added.

EMPLOYMENT IN KEW: Go-Ahead. Candidates must be more than 20 years of age and not more than 25 years. It is necessary that they have had five years' experience at least in good private gardens or commercial establishments. You will not be eligible therefore until two years or so. Write to the Curator, Royal Gardens, Kew, after that time.

FOXGLOVE: E. M. Very common; not due to hybridisation, but to several of the uppermost flowers running together into a regular cup.

GARDENER'S NOTICE TO LEAVE: E. D. We believe you are entitled to a month's notice or a month's salary.

GOOSEBERRY LEAVES: F. L. B. and E. C. *Aecidium grossulariæ*. Burn the leaves affected, and spray the bushes with liver-of-sulphur— $\frac{1}{2}$ oz. to 1 gallon of water. See illustration in *Gardeners' Chronicle*, May 14, 1904, p. 319.

GRAPES: A. L. G. The berries are badly affected with the spot disease (*Gloeosporium*). Burn the affected bunches as far as you can, and

spray the others with liver-of-sulphur, $\frac{1}{2}$ oz. to 1 gallon of rain-water.

HYDRANGEAS: R. M. C. Very fine. Did you use any special manure?

IRISES: F. A. See note on p. 42.

LUPIN: H. J. A very pretty variety that is worth perpetuating.

LYCASTE SKINNERI: W. M. Probably the plants have been overwatered at some time, causing the roots and eventually the young growths to decay. Frequently the new growths will damp off in this manner through drip from the roof, or by the indiscriminate use of the syringe when damping down. *Lycastes* do not require very much water until their new bulbs begin to show, but afterwards they may be given water almost without limit.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—W. J. B., Ltd. We cannot recognise the Rose. Send to some grower—G. H. 1, *Gloriosa superba*, warm greenhouse; 2, *Fuchsia*, we do not know the variety; 3, *Santolina incana*; 4, *Scolopendrium vulgare*; 5, *Nephrolepis cordata compacta*.—J. L. 1, *Valeriana* species; 2, *Symphytum patens* [?]; 3, *Chrysobactron Hookeri*; 4, *Asperula cynanchica*.—F. F. F. *Kalmia latifolia*.—A. H., *Orton*, *Syringa japonica*.—Newport, *Dendrobium moschatum*.—Nuneham, *Salvia Bethelli*.—Carnation, *Oncidium sphacelatum*.—H. D. W. *Vicia cracca* and *V. orobus*. Neither were numbered. Half an *Agaricus* arrived in bad condition, but it is undoubtedly *A. arvensis*, the "Horse" Mushroom, with which taste, odours, and spores all agree, but the "ring" had disappeared.—Wandering Jew, *Olearia macrodonta*.—J. C. *Lilium elegans*.—J. M. S. 1, *Pavia* species; 2, *Weigela rosea*; 3, send when in flower; 4, *Berberis vulgaris*; 5, *Lycium sinense*; 6, *Platanus orientalis* var. *acerifolia* (Maple-leaved Plane); 7, *Eunonymus europæus*; 8, *Pavia rubra*.—F. McD. 1, *Campanula glomerata*; 2, *Galega officinalis* alba; 3, *Sedum spurius*; 4, *Linaria hepaticifolia*.—G. P., *Harrogate*, *Nicotiana glauca*, illustrated in the *Bol. Mag.*, t. 2837. —P. J. P. *Agrostemma coronaria*; *Eccremocarpos scaber*, a useful summer climber outdoors. —F. G. B. *Deutzia crenata flore-pleno*. —Hants. *Cattleya Leopoldii*.—V. H. 1, *Oncidium maculatum*; 2, *Oncidium cheiroporum*; 3, *Lælia albida*; 4, *Cattleya intermedia*; 5, *Pleurothallis ornatus*; 6, *Stelis ophioglossoides*. —J. M. *Arauja graveolens*, figured in the *Gardeners' Chronicle*, September 8, 1888. —W. W., *Bagshot*. 1, not recognised; 2, *Spiræa opulifolia*; 3, *Cistus ladaniferus*; 4, *Hypericum pulchrum*; 5, *Potentilla variabilis*; 6, *Acer campestre*.

ODONTOGLOSSUM CITROSUM: W. M. You cannot do better than follow the cultural directions that were given in our "Orchid Calendar."

PEARS: G. W. G. Cracking from disproportion between the supply of water and its utilisation by the fruit. *Fusicladium dendriticum*, a fungus, is also probably present. Cut the branches back in autumn.

PICEA SHOOT DISEASED: J. R. We cannot see either insect or fungus. Is the drainage right, or is the tree suffering from the drought of the last few years?

POTATO DISEASE: W. H. Spray with Bordeaux-mixture, which may check if it cannot cure the malady. See *Calendar of Garden Operations*, to be had from our Publisher for 7 $\frac{1}{2}$ d., post free.

PLUM SHOOT DISEASED: Savoir. Silver-leaf, due probably to a fungus at the root. Cut away the affected branches and burn them. You must remove your furniture before the expiration of the term for which you have notice to quit.

COMMUNICATIONS RECEIVED.—R. A. R.—J. G. Westou.—S. & S.—A. J. S.—W. Rae.—H. S. W.—Wimble.—S. W. D.—W. E. B.—W. R.—J. K. J.—W. S. R.—D. S. A.—Narcissus.—C. D.—W. E. L.—Messrs. Dobbie & Co.—M. C. T.—F. B. B.

(For Markets and Weather, see pp. x. and xii.)



VIEW IN BASING PARK GARDENS, ALTON, THE RESIDENCE OF W. H. NICHOLSON, ESQ.

From a Photograph by F. Mason Good.



THE Gardeners' Chronicle

No. 917.—SATURDAY, July 23, 1904.

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GREY TOWERS IN SPRING.

GREY TOWERS, Nunthorpe, the seat of A. J. Dorman, Esq., is situated in a beautiful part of the Cleveland district, and is about one mile from Nunthorpe Station, N.E.R. The mansion, which is built of ironstone, is a fine architectural structure. Its grey towers, from which it takes its name, can be seen rising from amongst the trees for miles round, and form quite a conspicuous feature in the landscape.

The pleasure grounds comprise some 46 acres of land, much of which has recently been added. The scenery from these grounds is very fine. It takes in on one side a fine view of some of the most noted amongst the hills of Cleveland, viz., Roseberry Topping and Easley Hill. Upon the summit of the latter is a monument erected to the memory of Captain Cook, the celebrated navigator, who was born in the village of Marton, and went to school at Great Ayton, both of which places are situate close under the hill. The country is well wooded, although many of the plantations are young. The pleasure grounds are upon sloping undulating ground, and these are the great feature of the place. There is no attempt at geometrical designs or closely-trimmed lawn, except in close proximity to the house. Everything possible has been done to preserve and maintain the natural beauties of the landscape. Some grass walks, which are kept cut close for convenience, lead to different parts of the grounds, but elsewhere the natural herbage

is allowed to grow rampant. Many wild flowers are growing among it, together with Narcissi, Daffodils, Tulips, Fritillarias, Primroses, and other spring flowers.

Passing from the mansion to the right and through shrubberies, some fine borders and clumps of Rhododendrons in great variety and Ghent Azaleas were to be seen at the time of our visit. Amongst these are planted spring-flowering bulbs, in which the Darwin and old-fashioned border Tulips are well represented. To the left a fine collection of the Coniferae has lately been planted, and judging from the luxuriant growth and fine appearance of some of the larger specimens planted some time ago, in course of time these will be most interesting.

Amongst the shrubs, of which there is a great variety, Prunus Pissardi with its purple foliage, Forsythia viridissima, Japanese Maples, Berberis Darwinii, B. stenophylla, Cydonia japonica, and varieties of Rubus are particularly noticeable. Groups of border flowers give to the whole a bright appearance—viz., Doronicum pardalianches var. Harpur Crewe, Lychnis diurna flore-pleno, Heuchera micrantha, Arabis, Alyssum, and Aubrietias in variety, Pyrethrum Tchihatchewii with its Daisy-like heads is rampant; Grape Hyacinths and Eremurus himalaicus were just throwing some strong spathes of flower.

At the bottom of the pleasure-grounds is a large lake, in which Water-Lilies in variety and other water-plants are growing. On the banks of the lake are mounds covered with Dogwood, Rubus, &c. In the moist places are Spiræas and Trollius in variety, Caltha palustris, Forget-me-nots, a purple-flowering Cardamine, and other interesting plants. A very large group of Saxifraga cordifolia var., with its bright deep-pink flowers, is a striking object in the distance. At the back of the lake immense groups of Rhododendrons, plantations of Conifers and deciduous trees intermixed, add to the beauty of the landscape. Turning back from the lake and looking towards the house one obtains a fine bird's-eye view of a large rockery and alpine-garden, which, with its border shrubberies, is about 7 acres in extent. The whole is arranged with considerable taste and skill, and reflects great credit upon Mr. A. Findlay, the head-gardener, under whose supervision the whole design has been planned and carried out. On the top of some of the hillocks, Pinus parviflora and other rock Coniferae are growing. Patches of Erica vulgaris carnea, E. v. aurea, E. mediterranea, Gentiana acaulis, a hybrid named G. celestina with lovely blue flowers, Lithospermum prostratum, Aubrietia deltoidea grandiflora, Alyssum montanum, &c., to which may be added Andromeda japonica, its young growths tipped with purple-red; Cassinia fulvida, with golden stems and foliage; and the yellow Gorse standing out grandly, all combined to produce a magnificent sight.

Examining the rockery and alpine garden more closely, the following were noted:—Phlox subulata, a double form of the Ground or Moss Pink; Euphorbia villosa, yellow and green; the charming little Box-leaved Berberis dulcis nana, Irish Heath, Menziesia polifolia, Fritillarias in variety, Anemone nemorosa (white), A. Robinsoniana (large azure-blue), A. alpina (white, growing in damp places), A. blanda, Ramondia Nathaliae (growing out of the fissures of the rock), the rare Cardamine trifolia (creeping in moist places), Arenaria balearica (a pretty little Corsican creeper with white flowers), running over damp stones, forming a close, dense moss like carpet, just commencing to flower in the more sunny spots), Orobis vernus (purple and blue), Iris pumila, Aponogeton distachyon (with its pretty, sweet-scented flowers growing in the water), Tritelia uniflora (the spring star-flower),

Phlox verna (just coming into flower), Geum montanum, Phlox amoena, Armeria leucantha, Andromeda tetragona (with its white, Lily-of-the-Valley-like flowers), the rare Andromeda vitellina (yellow), Primula Allionii (which does well here running over the stones), Allosorus crispus (most luxuriant in a little nook), Androsace sarmentosa (wedged in amongst the stones and running over them), Echeverias in variety, Saxifraga Camposii, S. Wallacei, S. granulata, fl.-pl. (Fair Maids of France), little patches of Hutchinsia alpina (white, full in flower), Polygala Chamæbuxus, Thymus corsicus (on the walks, soon to form a nice, soft carpet to walk upon), and a host of others too numerous to mention. The whole arrangement shows evidences of the work of a master-hand. Visitors to the North interested in this branch of horticulture would be amply repaid if they would inspect this fine collection. Alfred Gault.

NEW OR NOTEWORTHY PLANTS.

POTENTILLA NEPALENSIS VAR. WILLMOTTIÆ.

Four examples of a very pretty little Potentilla were exhibited at the Royal Horticultural Society's show held at Holland House, Kensington, on July 12 and 13, by Messrs. Sander & Sons, St. Albans, under the above name. This plant has a very remarkable history. About two years ago Messrs. Sander received from their collector Forget, then in the province of Santander, in Columbia, seeds of what he described as a "fine dwarf Potentilla." They were sown, and when the plants flowered a short time ago, a plant was submitted to Kew for determination. The flowers immediately recalled those of the Himalayan Potentilla nepalensis, Hooker, and a comparison with both dried and living specimens confirmed the impression, the chief difference in the living plants being that the novelty was much dwarfer, indeed under 6 inches high. Equally dwarf examples, however, are found among Himalayan dried specimens, and although such might be expected to lose this character to some extent under cultivation, I am told that in some forms the habit is constant. The thought then naturally arose, Can there be any mistake in the record? or, at least, were the specimens obtained from some garden? But the collector, I am assured, states that the plant occurs "wild." If so, it is a most remarkable geographical discovery. It is not remarkable that a Potentilla should occur in Colombia—for P. andicola, Benthams, is a native of that country; and P. Dombeyi, Nestler, by some regarded as a variety of the preceding, occurs in Chili—but it is remarkable that a Colombian mountain plant should so closely resemble another from the Himalayas, on the other side of the globe, that it is almost impossible to find characters to separate them. The agreement occurs throughout the shape and texture of the vegetative and floral organs, even extending to the colour and details of the achenes and styles, when seen under the microscope. It is true that according to Lehmann, who monographed the genus, the nearest ally of P. nepalensis is P. Thurberi, A. Gray, from the mountains of New Mexico; but that species, which is also in flower at Kew, is easily distinguished by the silvery under surface of the leaves, the darker flowers, and some other differences. Mr. Forget should be invited to give full particulars of his interesting discovery. The four plants exhibited were like the one sent to Kew. They formed neat little tufts, under six inches high, bearing flowers over an inch across, and having petals of a brilliant magenta-rose—in short, miniature editions of the beautiful P. nepalensis. R. A. Rolfe.

IRIS SPRENGERI,

SIEHE.

A NEW species, the smallest of the *Oncocyclus* group. It grows in the Lycaonian Taurus at an altitude of 6,500 feet. It is of easy cultivation. This dwarf plant is only 4 inches high. The rhizome is creeping and forms runners. Leaves 4 to 5½ inches wide and about 4 inches long, greyish-green, nearly sessile (stemless?). Ovary 1 inch long, mostly enclosed within the bipartite spathe. This spathe is very long, and almost reaches to the top of the flower. Outer petals clear yellow with bright purple-red spots and veins. Beard golden-yellow. Inner petals silvery-white veined with purple-red and black. Stigma golden-yellow spotted with brown and veined with black. Stamens grey. The plant is as interesting as it is beautiful. I first found it in 1903. W. Siehe, Mersina.



FIG. 21.—IRIS SPRENGERI, Siehe. (Natural Size.)

NURSERY NOTES.

A SCOTTISH HARDY PLANT NURSERY, TORBREX, ST. NINIAN'S, STIRLING.

AMONG the few nurseries in Scotland practically entirely devoted to hardy flowers is that of Mr. Mungo Chapman, Torbrex, St. Ninian's, Stirling, one of moderate extent, but containing many good plants. Mr. Chapman was well known for many years as the head gardener to Mr. Charles Jenner, at his wonderful place at Easter Duddingston, Edinburgh—an appointment he retained until the death of his employer led to the disposal of the property with its unique garden of alpine and shrubs. Some seven years ago Mr. Chapman became tenant of his present nurseries, and it is gratifying to learn that he finds an increasing share of business fall to his lot. The nucleus of the collection was formed from that of his late employer, by permission of the trustees, and there are among the plants a considerable number but rarely seen in an ordinary nursery.

The establishment is only a short distance from the St. Ninian's terminus of the Stirling tramway

lines, and is thus convenient of access. Mr. Chapman's house is of some historical interest, as it has attached to it the tradition that Prince Charles Edward stayed in it in the course of his ill-fated enterprise to recover the British Crown. In front of the house are some rockeries and beds filled with some good plants. Among these is *Mimulus Burnettii*, the hybrid between *M. luteus* and *M. cupreus*, a free-growing, hardy plant. Here also are *Waldsteinia geoides*, *Alyssum saxatile* fl. pl., *A. olympicum*, the pretty *A. spinosum*, and others of the genus; several *Erodiums*, such as *macradenium* and *alpinum*; *Saxifrages* in great variety, with such good alpine *Dianthi* as *D. alpinus*, *nitidus*, &c. *Linum arboreum* does well here; while the *Helianthemums* are well represented by such as *H. lunulatum*, *H. Jubilee*, and one or two more of Mr. Hill-Normand's sports, with a number of good single forms. The pretty *Linnaea borealis* seems thoroughly happy, and

sections, such as *valdensis*, *Boydii*, and other alpine in demand and preferred in pots by some purchasers.

In the nursery lines are numbers of good alpine and border flowers, together with a large stock of dwarf and other shrubs. Among the alpine flowers are several good *Primula* species, such as *frondosa*, *japonica*, *sikkimensis*, and others; with *Saxifrages*, *Sedums* and *Semprevivums* in much variety.

A good many dwarf and tall *Campanulas* are also cultivated, and I noted as representative of the various other hardy alpine and border flowers, *Platycodons grandiflora* and *Mariesii*; *Oxytropis campestris*; dwarf, early and late-flowering *Phloxes*; the old double purple *Rocket*; *Rodgersia podophylla*; *Vancouveria hexandra*; *Epimedium pinnatum*, *Muschianum*, &c; *Incarvillea Delavayi*, very good here; the double form of *Meconopsis cambrica*; *Pterocarpus* or *Scabiosa Parnassi*; *Chrysogonum virginianum*; *Achillea ægyptiaca*; *Gentiana lutea* (in flower); *Statice latifolia*; *Salvia pratensis*; *Aster alpinus*, in several forms; *Geums*, *Heucheras*, *Irises cristata* and others of both dwarf and tall habit; *Anemone alpina* and *A. sulphurea*; *Cheiranthus Dillenii* and *C. alpina*; *Dryas octopetala* and *D. Drummondii*; *Erigerons*; *Enothera M. Cuthbertson*, *Iberises*, and many more.

The shrubs are very interesting, and one was pleased to see two plants of rather uncertain hardiness, according to some, in flower in the open in this exposed nursery. These are *Buddleia globosa* and *Ribes speciosum*. Neither of these is grown on a wall, though partly protected by the shelter of a low one. Both bloom freely and have been grown without protection. There is a very good collection of shrubby *Spiræas*, such as the varieties of *S. japonica*, *S. opulifolia*, *S. arifolia*, and others of the best and most distinct varieties.

A number of out-of-the-way *Roses*, such as the old one known in Scotland as "Prince Charlie's Rose," *R. alpina*, and several species are cultivated here. *Atragene alpina*, New Zealand *Veronicas* in many forms, *Piptanthus nepalensis*, *Cornuses*, *Gaultherias*, such as *procumbens*; *Bryanthus erectus*, *Olearias*, such as *Haasti* and *Gunniana*; *Escallonia Phillipiana*, *Abies orientalis*, *A. Clanbrassiliana*, *Juniperus spherica*, and some other *Conifers* of dwarf and taller habit; *Lupinus arboreus*, *Genistas*, *Cytisuses*, *Cotoneasters*, and a large number of other shrubs of evergreen and deciduous habit, are cultivated here in the hardest possible way. There are also small stocks for propagation of a number of plants not yet well in commerce or which have become scarce. The nursery, although, as already remarked, not large as nurseries go, is worth visiting in many ways, and Mr. Chapman's own knowledge of plants makes a call upon him one of more than ordinary interest. S. Arnott.

MESSRS. JOHN POPE & SONS, KING'S NORTON.

This nursery was founded in 1750 by Luke Pope, whose portrait as he appeared in 1788 adorns the front page of the cover of some of the catalogues issued by the firm, and whose lineaments suggest a typical Englishman of the day. Luke Pope erected a residence on the Handsworth Nursery, in which the present proprietor, John Pope, and his father, Henry Pope, were born. In the early sixties the rapid extension of industrial Handsworth necessitated a change of site further into the country, and the business was removed to King's Norton, to a position near the parish church and railway station. Here, again, smoke and other troubles were found to affect the well-being of plants, and resort was had to a more favourable spot a mile distant towards the country, where there is now an acreage of some 35 to 40 acres. This is known as the Middleton Nurseries; those near the station, which are largely dismantled, provide convenience,

such *Pentstemons* as *P. humilis* and *P. Menziesii* are doing well. There are also *Dryas octopetala*, the interesting *Astragalus Tragacantha*. New Zealand *Veronicas* in considerable variety, *Lithospermum prostratum*, *Globularias*, several choice dwarf *Conifers*, including *Dacrydium Franklinoi*, only a shrub in this country, though attaining 80 to 100 feet in height in Tasmania, where it is known as the Huon-tree. A notable plant here is an usually good specimen of *Teucrium pyrenaicum*, which many find difficult to grow to such a size as at Torbrex. Dwarf *Campanulas*, such as *pulla*, *G. F. Wilson*, *alpina*, and the choice *C. Allioni*, and many others are well grown in a suggestive way on these rockeries; while in one of the beds there is a good plant of the effective *Aciphylla Munroii*. *Ourisia coccinea* does unusually well and flowers freely.

In the nursery itself a distinct feature is the comparatively small number of plants in pots, by far the greater portion of the stock, even of those classed as alpine, being cultivated in lines in the open ground and kept without any protection. The main portion of the stock in frames consists of some of the choicer *Saxifrages* of the different

for packing, storage, &c. Here, at Middleton, Mr. John Pope and his family reside, at what is known as The Ericas, and behind the residence are the nurseries. The main south and west line of the Midland Railway runs through the lower-most portion of the grounds, which gradually fall away on a slope towards the valley. Here can be seen three span-roofed houses in divisions, each 300 feet in length, mainly devoted to a supply of plants, cut flowers, Tomatos, &c., for the Birmingham and other markets. In addition to these erections, but near the residence, is a range of nine commodious glass-houses, two or three of large size, all occupying a position on one side of the nursery. The general character of the soil is that of a clayey loam of good heart, which well repays proper cultivation.

Behind Mr. Pope's dwelling-house is a small terrace-garden of choice alpine plants, which is under the care of Mrs. Pope, and contains many interesting subjects brought from abroad on the occasion of visits, with some home treasures. There are side borders also, and it is shut off from the nursery grounds by specimen deciduous and evergreen trees and shrubs. By the side of this is a bulb-garden. Here, too, is a span-roofed house devoted mainly to Auriculas, show and alpine, and certain species of Primulas. There is a collection of the best named sorts of show and alpine Auriculas, and numerous seedlings of good quality; some forms of *Primula intermedia* were particularly attractive. Near by, under the shade furnished by quarters of ornamental trees, and revelling in the coolness afforded by the shade, were patches of double Primroses in large-flowered varieties, including the fine double crimson, also of the large yellow Evelyn Arkwright, blue varieties and others. Such cool and shady spots appeared to afford a congenial locality for many choice hardy plants.

Daffodils are largely grown for market, and for supplying the trade with bulbs—a branch of nursery work which has been carried on for many years, for Mr. Pope was among the first to note the growing commercial importance of the flower, and also its value for exhibition purposes. The Daffodils are grown in large beds, and the fine character of the blooms testifies to the suitability of the soil and the careful culture given. The raising of seedling Daffodils has been followed for years, and beds of seedlings can be seen in the spring-time from one to six years old, as the seedlings rarely bloom until the latter age. During the time of my visit the seedling beds were being carefully examined, and any one of promise was duly marked.

One of the specialties of the firm is the Clematis, both spring and summer-flowering varieties, which are largely grown for the trade. As a general rule stocks of *C. vitalba* are mostly employed for grafting, those of *C. flammula* are used for some of the late varieties. Stocks of *C. vitalba* are raised from seeds gathered from the hedgerows in late summer, and laid out on mats to dry. As soon as the seeds are ready they are sown in pots; they germinate quickly and stocks are soon formed: they are used when a year old. Grafting is done in the early days of March; the grafted plants are ready for re-potting in about six weeks; by June the plants are 4 feet in height and ready for sale. New varieties are promptly added to the collection, and some of the most popular among the newest are Colette Deville, reddish-carmine, a vigorous grower; Elise Späth, dark purple-violet; Flammula, rubro-marginata; a new snow-white form of Jackmanni; La Fontaine, blue tinted with crimson; Madame Moser, creamy-white, becoming purer with age; Marcel Moser, a large-flowered variety, mauve with red bar; Mathieu de Dombasle, violet margined with purple; Nellie Moser, white and mauve; and Ville de Limoges, pure white with double blossoms.

Roses, and especially the newer varieties, are grown for the trade as well as for ordinary sales. One of the varieties in the greatest demand is Frau Karl Druschki; another is Alberic Barbier, one of the Wichuriana group, which has evergreen foliage like that of the old Aimée Vibert; another is Dorothy Perkins; also The Farquhar, a cross-bred Wichuriana type of a very bright pink colour and fully double; and numerous other novelties. Mr. Pope said he regarded H.P. Frau Karl Druschki and H.T.'s Mildred Grant and Madame Ravary as the three most popular Roses of the day.

Ivies, both green and variegated, form another feature in this establishment. The most popular of the variegated kinds are madeirensis variegata and the Golden Irish. The first-named of these does well in the Birmingham district, and is to be found on the walls of many villa residences.

Down in the valley are three long span-roofed houses in which a great variety of subjects are grown for the supply of the stand in the market hall. Stephanotis is largely planted out, so are Roses and Tomatos. Then there are such subjects as Hydrangea paniculata, Astilbes, Asparagus Sprengeri in hanging baskets, Azaleas, &c. Close by is a frame-work 300 feet in length, for one of the horticultural travelling structures, 100 feet in length, and 30 feet in width. One-third is used for early Daffodil-blooms, and enormous supplies of bloom are obtained in this way; the middle division is for Tomatos, and the third for Chrysanthemums. The glass structure is readily moved on rails placed on brickwork as required.

Of out-door nursery stock there is a great variety, and an ornamental character is given to the nursery by the planting of handsome specimens of Japanese Acers and such subjects. Archways of Roses span many of the walks, and much that is inviting is to be noticed. Fruit-trees, Roses, &c., fill large spaces in the open. R. D.

ORCHID NOTES AND CLEANINGS.

CATTLEYA MOSSIÆ "MRS. C. H. BRAMLEY FIRTH."

FLOWERING at Ashfield Hall, Marshfield, Chippenham, the residence of C. H. B. Firth, Esq., is a singularly beautiful and distinct form of *Cattleya Mossiæ*, to which has been given the above distinguishing name.

A flower kindly sent is of large size and well proportioned. The sepals and petals are white with a very delicate flush of pink or lavender, no more pronounced than the similar colour which may often be traced on a good pearl. The lip, which has a beautifully undulated and fringed margin, is of the same pearly tint, the base having a light orange hue, and the front has a marbling of a decided blue colour, which fades to lavender towards the margin. Among the many varieties of the Reineckiana section of *C. Mossiæ* it is one of the most distinct.

DENDROBIUM ADUNCUM.

A very fine form of this pretty and uncommon species is flowering with R. G. Thwaites, Esq., Chessington, Christchurch Road, Streatham. The flowers are white and wax-like in substance, slightly tinted with purple, and with a bright purple anther-cap. The species generally has solitary flowers, or short racemes of two or three, but in Mr. Thwaites' variety the racemes bear five to seven flowers. The plant was imported from Singapore, but whether it was collected in that locality or not is not known. The type has been recorded from Assam, and from the Lo-fan-Sha Mountains, China. Probably the one now flowering may be a larger and stronger form from a new locality.

It is also interesting as pointing a moral often referred to in the *Gardeners' Chronicle*, viz., the

advisability of securing young specimens by cutting of the pseudo-bulb, or by division, for the double purpose of securing strong young plants free from the inactive parent-stock, and in order to establish the safety of the plant.

In this case, as in thousands of others, the parent-plant died. But Mr. Black, the gardener at Chessington, had taken cuttings of the pseudo-bulbs, which in a very short time were larger than the old plant at its best, and considerably more vigorous.

DENDROBIUM CRYSTALLINUM ALBENS.

Flowers of the typical rose-tipped form of *D. crystallinum*, and also of an albino of it, have been received from Eustace F. Clark, Esq., Chamonix, Teignmouth. The variety *albens* has milk-white sepals and petals with but the faintest trace of pink on the sepals, the labellum being rich yellow tipped with white. The species is very pretty and distinct, and easily recognised by its remarkably narrow and elongated anther. Like its companion *D. Bensonæ*, it is not a robust grower, and consequently periodically becomes scarce. Too much heat in the resting season accounts for the loss of a large proportion.

FOREIGN CORRESPONDENCE.

NAPLES.

HEMEROCALLIS CITRINA is a very fine night-blooming plant. The sweet-scented, clear yellow flowers are visited by many nocturnal butterflies, and I have especially observed the great *Sphinx nerii* and *Sphinx ligustri* and others. The flowers open in the afternoon about 5 o'clock, and are faded by 10 o'clock next morning. They are very interesting because the three outer segments are recurved, whereas the three inner ones are erect. It seems that this species is widely diffused in China. Mr. Charles Sprenger has received it from Shen-shi, and also from Hupe. The Shen-shi form grows more luxuriantly than that derived from Hupe. Many hybrids have been raised from this new species by reciprocal crosses between it and *H. citrina*. William Müller, Vomero, Naples.

EXPERIMENTAL CULTIVATION.

(Continued from p. 5.)

PREPARING FOR WORK.—When a piece of land has been selected for experimental purposes, the first consideration is to see that it is clear of all the more troublesome weeds, especially Twitch, Docks, Bellbine, &c. A thorough system of preparatory cultivation will be necessary if these pests are present in any quantity, and in taking such land the expenses that will be thus incurred must be set off against the rent or price. If the land be not sufficiently cleaned it will be a continual source of trouble in routine work, besides materially interfering with the objects of the experiments. It is far better in every way, when possible, to secure land that has been subjected to good and clean cultivation, and if a record of the system of cropping can be had for several preceding years it will prove helpful.

Occasionally, however, for various reasons the only land available or suitable in other respects may be some which has been neglected, and in consequence is foul with the worst of weeds. Two courses are open in this case; one is to subject the ground to a thorough breaking up by horse or hand labour, and allow it to have a summer fallow, clearing and burning the Twitch, &c.; the other is to prepare it, and crop it with a good cleansing crop like Potatoes. The chief objection urged against cropping is that if the land has been previously analysed, it will either necessitate taking another series of analyses; or if the first alone are depended upon, the record

may not be quite correct as regards some of the soil constituents. In comparison with the importance of having the ground thoroughly clean, this is a small matter, and if the whole of the land is treated in the same manner as regards cropping and manuring, it will be in an equal condition for any subsequent treatment. As to which course is preferable, the state of the land must determine: if it be excessively foul a summer fallow is the only one which will prove effectual; if it be only moderately bad the cropping will answer the purpose and yield some return for the expense incurred.

As soon as the land is in satisfactory condition, some decision must be arrived at with regard to the character of the work to be carried out, so that the ground can be planned accordingly. The level portions should be allotted for manurial experiments, and if there are parts of irregular form, these can be best devoted to variety trials, if these are contemplated, or to some other work which will not require the land to be kept to the one purpose continually. Not only is it desirable to prolong manurial experiments over a considerable period, but there are few other purposes for which the plots can be employed without producing divergent results owing to the altered character of the soil. The general scheme should, therefore, be divided into the permanent and temporary plots, and careful consideration is required in this, so that if the former have to be extended it can be done without disturbing the whole plan.

PLANS AND ARRANGEMENT.

In laying out the ground a quadrangular plan should be adopted, and if the land is irregular in outline, the portions which do not come into the square can be devoted to ornamental borders or beds. But it is very undesirable, merely for the sake of avoiding formality in design, to introduce curved or irregular plots in the general plan. For convenience in working, cropping, and recording results, square or oblong plots are the most suitable in every way. It will also be found advantageous to have them as nearly equal in size as possible, or where different sizes are adopted the smaller plots should represent some definite proportion of the larger ones, such as half or quarter, &c., as all these apparently small considerations ensure a material saving in after labour and trouble.

The size of the plots adapted for different crops has already been discussed, and it is unnecessary to add to what has been said on the point, except to emphasize the importance of avoiding unduly small plots whenever the crops are to be calculated by the acre.

A narrow divisional path or strip of unoccupied ground is desirable between most adjoining plots, but some arrangement of the sort is essential between plots devoted to different manurial experiments. A path 1 to 2 feet wide is convenient for many reasons, in which case the plots and paths can be permanently marked out with stakes. In some farm experiments, however, the whole of the land is ploughed and cultivated, the plots and paths being measured off and marked out each season. This is a needless trouble in most instances if it can be avoided, or wherever the land is cultivated by hand labour for garden plots.

Some experimenters advocate the exclusion of the margins of plots from the records of crops, while others prefer the introduction of central, neutral, and normal plots alternately with those having special treatment. Much can be said in favour of the last-named method, the chief point against it being the greater space required for carrying out a few experiments. Ample compensation is secured for this in the increased power of checking the results by comparison with numerous control plots. Wherever land is much varied in physical or chemical constitution,

it is the only way to arrive at reliable conclusions. In fact, most of the highest authorities are agreed that the control plots give the key to the whole of the experimental work. A distinction is, however, made between repeated normal check plots, and those in which no manure is applied. The Report of the Agricultural Education Association has the following note that deserves attention:—

"In many cases the unmanured plot is duplicated, but a second unmanured plot may often be a most unsuitable check plot. When the crop is one which is usually unmanured, then the unmanured plot is grown under normal conditions, and two such plots may measure the natural variation of the soil; but when the crop is one which is always manured, then the stunted crop grown without manure should not be used to indicate the natural inequalities of the soil, for it is always liable to distort them. In the case of moderately good soils it will usually magnify these inequalities, and in very poor soils it will have the opposite effect."

Still, beyond what is here stated there is much that could be said in favour of repeated control plots, though they are rendered less necessary if the main plots are in duplicate, and these are situated in different parts of the ground. To obtain average results of any value, the inequalities of the soil must be shown in the records, for it is obvious that one plot manured or treated in a certain way in one portion of the land may give quite as extreme results as a normal or check plot in an unfavourable or specially advantageous position.

PLOTS AND LABELS.

The arrangement of plots on the duplicate system to separate the two series conveniently, without introducing too great a difference, may be illustrated as follows. If eight plots are to be provided they can be arranged in three ways, the numbers showing the relative position of the plots.

1 2 3 4 5 6 7 8			
5 6 7 8 1 2 3 4			
1 2 3 4	5 6 7 8	1 5 4 8	
8 7 6 5		2 6 3 7	
4 3 2 1		3 7 2 6	
5 6 7 8		4 8 1 5	

Six plots can be conveniently arranged in this way—

1 2 3
4 5 6
3 2 1
6 5 4

Five plots or fewer are best with central or neutral plots (0), on this plan—

1 0 2 0
0 4 0 3
2 0 1 0
0 3 0 4

These notes are only intended to give an idea how the matter may be dealt with, the scheme can be modified according to the form of the ground and the requirements of the experimenter. But any system which brings the duplicate plots into adjoining positions is open to objection, and it practically involves a waste of effort.

SYSTEM OF LABELLING.

When the plans have been prepared the method of labelling the plots in the ground and entering them in record-books must be given consideration. A system of continuous numbering from 1 onwards is simple and convenient, but in prolonged or much-divided work it compels the use of high numbers, and as some of the experiments are completed or drop out for various reasons it leaves the numbers disconnected. Another way is to take a definite and short series of successive numbers for each group of associated experiments, or for each season, and then label them series A, B, C, &c., with the respective

numbers attached. It is generally preferable to have the plots themselves numbered, and if any subdivision becomes requisite the secondary plots can be indicated by asterisks, as, for example, 1, 1*, and 1**; but where this can be avoided it is better to start a fresh series.

Labelling to be rendered reasonably durable and efficient presents some difficulties, but many neat and excellent labels are now procurable from manufacturers who make a speciality of the subject. It is desirable to have a uniform style throughout, as the appearance is more business-like. Where small cast-iron labels are employed, which are secured to wooden stakes, they should be of such a size that they are protected at the back, otherwise the corners are very liable to be broken, and the projecting portions prove a frequent source of trouble to the workers. In several establishments lead is largely employed, cut into strips or squares, and with sets of punches both letters and numbers can be stamped on. If the indented parts are then filled with white lead, a legible and durable label is produced, which is scarcely affected by the weather. At periods when experimental grounds are under the inspection of visitors, a label briefly describing the experiment is sometimes placed to each plot. For permanent work, painted enamel metal labels are used suspended on suitable stakes, in other cases stout cards clearly printed and well varnished are suitable, but these require to be either nailed to stakes or placed in metal cases. If wooden bases are used for metal labels they should be of sound material and well tarred; failing this, constant trouble will be experienced in the renewal of the supports or in the loss of labels. R. Lewis Castle.

(To be continued.)

THE ROCK GARDEN.

THALICTRUM DELAVAYI.

THIS is one of the most beautiful additions to this genus that have been made for a long time. The species is a good flowering plant, and distinct by reason of the rich violet tone of the sepals. The large array of conspicuously exerted anthers is not a feature in this kind, as is the case with so many well-known sorts. The plant grows 2 feet or more high, but as yet I have experience only of small specimens. The triternately compound leaves are of a blue-green shade, the segments very minute, from roundish oval to wedge-shaped. The growth is comparatively slow, and in the elegant, delicate texture of the leaves the plant bears some resemblance to the very rare *T. pubescens*. The above species will be best dealt with among the rarer plants in the rock-garden, and should be afforded a deep root-run. My solitary specimen is growing well in turfy-loam and cow-manure.

CONANDRON RAMONDIODES.

Large examples of this choice Japanese plant are very desirable in those gardens where rare hardy plants are valued. Such specimens flower very profusely, and are attractive for a long period. The leaves are frequently of large size, approaching to 1 foot in length and $\frac{1}{2}$ foot in breadth. The blossoms are about 1 inch across, borne on a freely-forked corymbose cyme, and are lilac-pink in colour, or of a deeper hue if somewhat exposed. The plant loves the shade, and if treated as a perfectly hardy subject is quite herbaceous. If cultivated in a frame the plants retain their handsome foliage for the greater part of the year. The full beauty of the species will probably not be realised by permanent cultivation in the open garden unless in a few favoured districts. For the alpine house it would prove excellent, or colonised in a shady frame with a good depth of very sandy peat for its roots. E. J.

THE CAMELLIA.

ONE could not help noticing in the spring that the leading floral decorators in London showed by the designs in their windows that the white Camellia is now much employed in wreath-making, while it is also used in other designs. This fact may be taken as indicating that a reviving interest is being taken in the Camellia and its culture. The assistant to Messrs. W. Paul & Son, Waltham Cross, who staged the fine collection of plants and cut blooms at one of the meetings at the Drill Hall, stated that the last three years had witnessed an increase in the demand for plants.

It has been said that "all the flowers in the conservatory in winter and spring must give way to the Camellia." All may not agree about the beauty of a particular variety, but in a good collection, such as that from Waltham Cross, there are shapes and colours for all. Camellias may be divided into five classes: the perfect single, with its circle of ray petals and centre of golden anthers; *Donkelaari* and *reticulata* represent the semi-double type (the latter, to be seen in all its superb beauty, should be in the form of a tall specimen planted-out in a conservatory); the severely cupped type, of which the charming soft pink-and-white *Madonna* may be taken as a representative; *alba plena* represents the reflexed form; and intermediate between these two is the new large deep bright-rose *Duchess of York*. The extremes of size may be looked for in the bold and striking *Mathotiana* and the small *C. M. Hovey*.

Among the light varieties was one bloom, small in size but perfect in form, bearing the name of *Sandade de Camillo Aureliano*, white with a citron centre; this seemed to be a model of what a Camellia should be. Other fine varieties are *Marchioness of Exeter*, large pale rose; *Conspicua*, bright deep rose; *Boadicea*, soft pink with an edging of white to the petals; *Montironi vera*, white with slight flakes of rose, charming; and *Adelina Benvenuti*, blush flaked rose.

In addition to the noble foliage of the Camellia, glistening green, and when in high condition always pleasant to look upon, there is to be taken into account the amount of cutting to which it can be subjected. Gardeners do not grudge the sacrifice of so much wood and foliage as their forefathers did, because the simple process of wiring can be applied to any flower which has a good calyx, so the blooms can be utilised without sacrificing a bud or leaf; and when skilfully wired it can remain in a bouquet quite as good and nearly as long as those which have the natural wood and leaves attaching to the blooms. Messrs. W. Paul & Son deserve the gratitude of lovers of the Camellia for enabling them to see it at its best, both in the form of plants and cut blooms. R. D.

NUTRITIVE PROPERTIES OF PALM FLOUR.—

M. R. GALLERAND contributes to a recent issue of the *Comptes Rendus* an account of the nutritive properties of the flour of the Palm, *Medemia nobilis*, or the *Sathranabe*. This tree in the Ambongo district of Madagascar covers large areas by the borders of the sea and in the neighbourhood of running water. The *Sakalaves* cut down the trunk, which contains from 4 to 10 lb. of pith; this pith they dry, pound and sift. A certain quantity of the flour thus obtained was submitted to M. JUMELLE by M. PERRIER DE LA BATHIE, who obtained it, and it was analysed in the chemical laboratory of the Marseille Faculté des Science. The most noteworthy property of this flour proves to be its comparative richness in albuminoid substances. In this particular the *Sathranabe* pith exceeds the Potato, the Manioc, the Sweet Potato, and the Igname, as these tubers contain respectively an average of 6, 23, 3.30, 3.88, and 7.24 per 100 of these nitrogenous

substances. The quantity of starch is slightly in excess of that in the Sweet Potato, but less than that in the other three tubers.

THE COLORADO VARIETY OF THE DOUGLAS FIR.

In the *Gardeners' Chronicle*, of April 18, 1903 (vol. xxxiii., p. 244), I drew attention to the confusion which exists regarding the identity of the Colorado variety of the Douglas Fir, and I also, in the same place, referred to the extraordinarily slow growth in height of some plants I had seen in the previous summer in Peeblesshire, which were supposed to belong to this variety. At the



FIG. 22.—THE COLORADO VARIETY OF DOUGLAS FIR.
Age about 10 years; height above ground 4½ feet.

time I saw the Peeblesshire plants, I endeavoured to secure a satisfactory photograph of one of them, but owing to their unsuitable surroundings, I was unsuccessful in this. Quite recently, however, through the kindness of Mr. Massie, of Messrs. Dicksons & Co., 1, Waterloo Place, Edinburgh, to whom the plant was sent for identification, I have had an opportunity of obtaining a photograph (see fig. 22) of a plant which seems to be identical with the Peeblesshire plants in every respect. As may be seen from the photograph, this plant is quite distinct in habit from the ordinary green or Pacific form of the Douglas Fir, the main side branches, instead of spreading out almost horizontally, as in the Pacific form, take a more or less upright course, and this, coupled with the short internodes of its stem, gives the plant a more bushy appearance than that assumed by the Pacific form, and a branching habit not unlike that of the Scots Pine when of the same height.

A few particulars regarding the height, &c., of this specimen will give readers of the *Gardeners' Chronicle* some idea of the slow rate of height growth which this variety makes. The plant had been cut over at about 6 inches above the

ground, and the total height of the plant above the ground was 4½ feet. At the point where the stem had been cut through I counted the number of annual rings, and found this to be seven, so that the plant must have been at least ten years old. The following are the annual growths in height of the leader shoot for the last five years, taking them in backward succession:—1903, 14½ inches; 1902, 13 inches; 1901, 6½ inches; 1900, 4 inches; 1899, 2½ inches, giving a total height growth of less than 3½ feet for the whole period, and leaving a little over a foot as the aggregate growth of the first five or more years. A. D. Richardson, Edinburgh.

NOTICES OF BOOKS.

OUR MOUNTAIN GARDEN. By Mrs. Theodore Thomas ("Rose Fay"). New York: The Macmillan Co. London: Macmillan & Co., Ltd.

THIS is an interesting account of how a wild tract in New Hampshire was transformed into a comfortable and enjoyable home. "The land," says Mrs. Thomas, "was a wild, uncultivated tract of about 25 acres upon the mountain-side. It was partly wooded, and strewn with great boulders of all kinds and sizes. At its lower end flowed a tiny brook, which spread over a small hollow into an ugly marsh. The underbrush grew on all sides so rankly that one could not walk 20 feet from the house."

The new inmates superintended the building of every inch of their residence, thus ensuring the attainment of their particular wishes. Similarly with the garden, "avenues were made to sweep broadly over accommodating clearings; wayward paths meandered alluringly through the woods; the marsh was turned into a pond; ugly, unsightly growths were pruned away, and pretty nooks and corners began to appear, which seemed to call for flowers and Vines to add grace and colour to complete their beauty."

To start a garden thus from the very beginning is not possible to many of us on this side of the Atlantic, but we can at least be interested in reading how "Felsengarten" was gradually formed and beautified. The author proves yet again that personal experience is by far the best teacher, and discourses pleasingly of her discoveries and methods. The spelling of the names of plants needs revision; and surely many more than those mentioned in the list could have been induced to flourish! The illustrations add much to the attractions of the book.

A MANUAL AND DICTIONARY OF THE FLOWERING PLANTS AND FERNS, by J. C. Willis, M.A.; second edition. (Cambridge University Press.)

The utility of one of the most serviceable books for botanical students was impaired by the original plan of publication in two volumes, and by the circumstance that Part I. was intended to supplement Part II., as Part II. was wanting in co-ordination! The author's appointment as Director of the Peradeniya Garden at the time the book was passing through the press was also unfortunate. The second edition now published has been greatly improved as to the "co-ordination" of its contents. The hints given to the student as to how he may profitably make use of botanic gardens and museums are excellent, and supply a much-felt want. Similarly the hints on field work, what to do and how to do it, are most useful. Directions for collecting, preserving, and examining specimens are provided. Part I., so far as it goes, forms an excellent compendium of the general morphology, classification, and natural history of flowering plants. It will be specially valuable to the beginner from its modernity of treatment, though older students will

find that, like M. Jourdain, they have been availing themselves of prose without knowing it, and that much that is set forth as new is really like old jewellery in a new setting.

The second part comprises an alphabetical catalogue of the principal families and genera of flowering plants, with a few details as to their peculiarities and uses. Some of the synonymy quoted might well have been omitted, as it is hardly wanted in a handbook of such small proportions, and it is, moreover, of a doubtful character; thus, to cite one instance, under *Abies*, we find "*Abies californica*, Hort. = *Tsuga Douglasii*." The first name, whatever may once have been the case, finds no place in garden lists of the present day, and is omitted from the *Kew Hand-List of Conifere*; while the second was never generally adopted, and is now supplanted by the name *Pseudotsuga*. As details of this character are unprofitable, and only serve to confuse the beginner, they might well be left to the monographer, whose irksome duty it is to pry into these matters.

The paragraph relating to *Retinospora* requires modification, as the *Retinospora* condition is not confined to the seedling stage, as may be seen in adult plants of *Juniperus sinensis* or *Cupressus pisifera*, and the peculiar arrangement is not always retained throughout the life of the tree, since reversions—or shall we say progressions?—to the normal form are so common that they often serve to give the clue to the species to which the form belongs.

The little volume is full of interesting details not to be got elsewhere without consulting many books, as, for instance, the explanation of the hairy pedicels of the Wig plant, *Rhus Cotinus*, as an adaptation to secure the dispersal of the seed by means of the wind. Whilst the Manual will be of great service to the stay-at-home student it will be of special use to the traveller and to the resident in localities where access to botanical libraries is difficult or impracticable. Its small size, as well as the comprehensiveness of its contents, will render it a cherished possession by the botanist under the circumstances we have named, and a worthy companion of the *Treasury of Botany*.

EVERY MAN HIS OWN GARDENER, by John Halsham. With illustrations by Carine Cadby, the Rev. F. C. Lambert, and the Author. (London: Hodder & Stoughton, 27, Paternoster Row.)

Every man who can garden is nowadays anxious to publish experiences that seem new to himself, for the benefit of others. Here is yet another book wherein the author almost gleefully sets forth his little triumphs over difficulties in the hopes of thereby helping others to success. Every man must be so far "his own gardener" that no amount of reading can teach him as much as a few hours' personal experience with spade and hoe. At the same time books are a necessary supplement to self and even to *viva-voce* teaching, and while there is a place for the cut-and-dried text-book, there is also one for the chatty writer such as Mr. Halsham. He here tells us about soils and tilths, and crops and manures; with hints on seed-raising, herbaceous borders, the hot-bed, and other departments. "Making the Most of a Garden" should prove one of the most useful chapters; indeed all are full of more or less helpful suggestions.

The illustrations deserve attention. Some are working diagrams for tying, nailing, pruning, and other operations; others are reproductions from photographs. The portraits of plants, unlike the pictures on cheap packets of seeds, do not flatter the originals, but, on the contrary, hardly do them justice. We commend the book to gardening-lovers who like a friendly confidential style of literature, differing from technical

dryness as widely as it does from gush about pet plants and colours. It is refreshing not to meet eccentric characters with odd names, such as are brought nowadays into many books purporting to be mainly about gardens.

THE HONEY BEE: ITS NATURAL HISTORY, ANATOMY, AND PHYSIOLOGY. By T. W. Cowan, F.L.S., &c. Illustrated with seventy-three figures. Second Edition. (London: Houlston & Sons, Paternoster Square.)

Bee-keeping, like other industries, is vastly altered in scope of late years. Scientific appliances have ousted the straw skep and the tongs and frying-pan serenades, and bees are studied, not as colonies only, but as individuals. In this book, Mr. Cowan, a well-known expert, gives us a second edition of the *Honey Bee*, and his object is "to embody in a compact form all recent discoveries found scattered in the various periodicals and proceedings of societies." He treats his subject from the standpoint of its anatomy and physiology, and much microscopic investigation is here summarised.

The modern bee-keeper, like the modern agriculturist, is required to know and to adapt his practice to scientific principles, not to work merely in the footsteps of his forefathers, learning nothing and forgetting nothing. Mr. Cowan's book will not teach him the manual operations of bee-keeping, but will instruct him concerning the anatomy, physiology, and consequent powers and requirements of the wonderful little beings who work for him. It possesses an excellent index, is copiously illustrated, and may be thoroughly recommended for the lucidity and accuracy of its contents.

OLD WEST SURREY: SOME NOTES AND MEMORIES. By Gertrude Jekyll. With 330 Illustrations from Photographs by the Author. (Longmans, Green & Co., 39, Paternoster Row.)

We know now that we may expect from Miss Jekyll a book that is interestingly written and prettily illustrated. In the one before us the author has not so much to say about gardens as about the homes of the people and their manners and possessions. Beginning with the, "Cottages and Farms," we are shown many buildings as charming to see as they were doubtless uncomfortable to inhabit, and all of styles that are passing or have passed away. Within these homesteads we come to the furniture, often ugly enough, save in some cases where it has the beauty of appropriateness to its surroundings. From furniture we pass to household utensils and ornaments, and to other details of old-fashioned country life in and out-of-doors.

Changes in recent years have been many and swift: "In the old days hay was mown with the scythe and made with the fork and rake. All the tools wanted hung in a small space in the labourers' back kitchen or out-house . . . Now to be fully equipped for hay-making, there are a number of horse implements, the larger ones requiring a pair of horses, and all these cumbersome things involving so much housing and care are for use within perhaps four weeks of the year."

Miss Jekyll cannot write a book dealing with so many phases of rural occupations without making some mention of cottage gardens. "The most usual form of the cottage flower-garden is a strip on each side of the path leading from the road to the cottage door. But if the space is a small one it is often all given to flowers. Sometimes, indeed, the smaller the space the more is crammed into it. . . . There is scarcely a cottage without some plants in the window; indeed the windows are often so much filled up with them that their light is obscured. The wise cottagers place them outside in the

summer, to make fresh growth and gain strength. These window-plants are the objects of much care, and often make fine specimens. . . . The cottage gardens always seem to me to speak of the joy of life and cheerfulness of disposition that are such fine attributes of the character of our genuine country-folk. It was more clearly shown two generations ago, when men's lives were less hurried and more concentrated, and when the simple country life was fuller and more satisfying."

The last chapters of this fascinating book speak of the country folk themselves, their manners of life, of speech, and of their dress.

The book for older readers has one drawback. The writer of it regrets that the notes were not made earlier; to us it seems almost too soon. In spite of the march of civilisation, the bellows, the patchwork quilt, and many other of Miss Jekyll's old-time objects are still in daily use. In turning her pages and looking at the pictures we meet with many articles by no means obsolete: interesting, no doubt, but hardly so in the sense here intended. *Old West Surrey* serves a good purpose in preserving records of what will some day be venerable, and should therefore not be allowed to pass into oblivion, but much of the subject-matter applies equally well to other counties. The particular spot dealt with is "the south-western corner of the county of Surrey; so near indeed to the actual corner that the adjoining portions of Hampshire and Sussex come within a radius of a very few miles, and are considered as within the district. . . . The practical boundaries of our country that we commonly call West Surrey, without any reference to parliamentary or other authorised divisions, are the long chalk line of the Hog's Back on the north, with its eastern prolongation beyond Guildford, and the Weald of Sussex to the south." The illustrations are excellent, and the book well got up.

JERSEY AND GUERNSEY GROWERS' YEAR-BOOK.

A publication of the greatest value to growers for market, salesmen and others. There are numerous tables very useful for reference, and numerous practical papers on matters of cultivation. We are glad to see a spirited protest against the retention of our "antiquated and by far too complicated system of money, weights, and measures." As to money, it is shown how a decimal system could be introduced without changing a single coin. In another issue it would be advisable to keep the advertisements apart from the text.

WAYSIDE AND WOODLAND TREES. By Edward Step, F.L.S. (London: Frederick Warne & Co.)

The scope of this little book is well defined in the preface. It is not meant as an "addition to the numerous treatises upon silviculture or forestry, but to afford a straightforward means for the identification of our native trees and larger shrubs, for the convenience of the rural Rambler and Nature-lover. The list of British arborescent plants is a somewhat meagre one, but all that could be done in a pocket-volume by way of supplementing it has been done, by adding some account of those exotics that have long been naturalised in our woods, and some of more recent introduction that have already become conspicuous ornaments in many public and private parks."

This, then, is a book of portable size, to be taken into the woodlands to help the traveller in identifying the species around him. The letterpress is plainly written and not uninteresting, as it is not merely a description of the aspect of each tree, but gives a pleasant account of the uses, associations, and history connected with it. This in itself might not be sufficient to initiate the un-

learned into the differences between Elm and Hornbeam, Yew and Juniper, and so on, but the text is aided by the illustrations. These are from photographs and are excellent. Each tree is shown under three aspects—in summer, in mid-winter, and showing the bole only; and the excellent practice has been followed of photographing the same individual under these respective conditions. Smaller illustrations show spray of leaves, flowers and fruits. Remembering always that it is not intended as a rival to more important works, this pocket guide should prove a reliable and agreeable companion.

THE GOD IN THE GARDEN. By Kable Howard. (London: Chapman & Hall, Ltd.).

A novel, or, to use the sub-title, an "August Comedy," the scene of which is a garden of the type peculiar to fiction. Here the familiar, strange-mannered, tender-hearted spinster tends flowers of many hues, and is at once the butt and the (disguised) good genius of the village in general and of lovers in particular. Shakespeare, the old gardener, is another well-known character, both in and out of fiction, and all who love their plants have suffered from his rule-of-thumb restrictions and his frequent grumbles. The book will give the novel-lover a pleasant hour, as it ends happily in the orthodox manner.

HEATING BY HOT-WATER.

A third edition of Mr. Walter Jones's treatise on heating by hot-water, on hot-water supply, and on ventilation, has been published by Messrs. Crosby Lockwood & Co. As many at this season will be overhauling their hot-water apparatus or erecting new structures, we cannot too strongly advise the careful study of this book, which is adapted to the requirements both of the expert who has to construct, and of the gardener who has to make use of the apparatus. Both will find in the book such a large body of information of the highest value that it should be kept on the shelf where the most useful books of reference find a place. It would be a good thing if young would-be housekeepers were instructed in the proper working of kitchen-boilers before incurring the responsibilities of housekeeping.

THE TEMPERATE-HOUSE, KEW.

THIS magnificent range of houses, composed of five compartments, is the largest plant structure in the world. It was designed by Mr. Decimus Burton, and the work of erecting the central block and octagons was undertaken by the contractors, Messrs. W. Cubitt & Co., in 1860. The octagons were completed in 1861, and the central structure in the following year. The completion of the north and south wings was left in abeyance for over thirty years. In 1895 it was definitely decided to complete the whole structure, and the work commenced in July. The south end was finished in 1897, and two years later, the north end, the cost of the whole building having been about £60,000. A brief account of the dimensions of the structure may be of interest to readers of the *Gardeners' Chronicle*. The large central division is 216 feet long, 140 feet wide, and 60 feet high. The north and south ends, known respectively as the Himalayan and Mexican houses, are each 116 feet long, 64 feet wide, and 38 feet high. The two octagons which divide the north and south wings from the central structure are each 54 feet in diameter, and 35 feet high.

The sections are joined together by four lobbies, each of which is 12 feet long by 7 feet wide. Beyond the wings are entrance porches, each 12 feet by 8 feet. The extreme length of the building is thus 628 feet, the greatest width being 164 feet.

A path 10 feet wide extends throughout the whole length of the building, while numerous narrower

paths divide the rest of the space into large beds or borders. The central house is devoted principally to Australian and other greenhouse plants, tree-Ferns, Palms, &c. These are planted-out for the most part in borders, where they reach large dimensions. The Acacias are made an especial feature, a large number of species being grouped together in one large bed, while numerous fine specimens are planted at intervals all around the house. In March and April, when the bulk of the species are in flower, they constitute one of the most attractive features of Kew. Altogether there are about sixty distinct species of Acacia grown in this house.

Thyrsopteris elegans, a plant which is only found on the island of Juan Fernandez. The fructification of this Fern is peculiar, the whole of the lower pinnae on a fertile frond being specialised for the formation of spores, each pinna becoming a raceme of stalked involucras; these, when ripe, turn a dark-brown colour, and remain on the plant for a considerable length of time. *Dicksonia glauca*, *D. Menziesii*, both natives of the Sandwich Islands, and *D. Wendlandi*, a native of Guatemala, are also thriving well under these cool conditions.

The principal plants which strike one on entering this house, however, are four immense speci-



FIG. 23.—VIEW IN THE TEMPERATE-HOUSE, ROYAL GARDENS, KEW.

Two large beds at the northern end of the house are entirely devoted to the culture of Tree-Ferns, while numerous large specimens are distributed throughout the rest of the house. It will suffice if the dimensions of a few of them be given:—*Cyathea medullaris* does especially well, and there are numerous fine specimens, one in particular being 35 feet high, with a spread of fronds 30 feet in diameter; *Alsophila excelsa*, with a stem 35 feet high and a 25-feet spread of fronds; *A. australis*, with a stem 12 feet high, and an immense head of fronds; *Dicksonia antarctica*, numerous fine specimens, one in particular with a stem 20 feet high and 2 feet in diameter at the base. *D. fibrosa*, *D. squarrosa*, *Cyathea dealbata* are also very fine. Among the rarer Ferns which thrive in this house are

men *Araucarias*, which tower up to the roof of the house. The oldest of these is *A. excelsa*, which is well over 100 years old, and is probably the largest and oldest plant of its species in the country. According to Smith's *Records of Kew*, p. 66, it was introduced from New South Wales in 1793. *A. Cunninghamii* (Moreton Bay Pine) is one of the original plants sent to Kew in 1826 by Allan Cunningham, who was the first to discover and introduce it to this country.

Of *A. Bidwillii* (Bunya Bunya) there are two large specimens; both were brought to Kew in 1846 by Mr. T. Bidwill, of the Sydney Botanic Gardens. In order to keep these large and strong-growing species within limits they have frequently been pruned back hard and the leader removed for a distance of 10 feet or so; this, if

anything, has improved their appearance, as they are all of neat symmetrical shape and densely furnished with growths. Many fine specimen Palms give a welcome change of character to the rest of the vegetation. *Jubaea spectabilis*, with an immense head and a trunk about 3 feet in diameter at the base, occupies a prominent position near the centre of the house. There is little doubt that it is one of the "several plants raised from seeds collected in Chili in 1843 by the botanical collector, Thomas Bridges" (Smith's *Records of Kew*, p. 111).

The Date-Palm (*Phoenix dactylifera*), 40 feet high, is a conspicuous object flanking the central walk, and is a source of much interest to the untravelling visitor. It is a female plant, and flowers annually. Of *Trachycarpus* (*Chamærops*) *excelsa* there are two large specimens, one of which is 50 feet high, and the other 40 feet. When in flower each spring these are a lovely sight with their numerous large inflorescences of bright yellow flowers. The large gallery which runs round this house, at a height of 30 feet, affords the visitor a ready means of seeing these large specimen plants to the best advantage. This is especially noticeable in the case of the Tree-Ferne, where one requires to look down into the head of the plant, in order to appreciate their full beauty. Several species of Bamboos, which are too tender for out-door culture at Kew, also find a home in this house. The plants on the stages are grouped together in sections representative of the flora of certain geographical areas. Plants from New Zealand, for instance, being grouped together, while other positions of the stages are devoted to plants from Temperate America, Temperate Asia, Temperate Africa, Australia, South Europe, and the Canary Islands.

The south octagon is devoted to the culture of specimen Oranges and Lemons, which are grown in large tubs. The north octagon is given up to Myrtles, Bays, Olives, and other half-hardy plants; these are, all trained as standards, pyramids, and other shapes, and are kept as formal-looking as possible. In the autumn both octagons are used for a display of *Chrysanthemums*.

The Himalayan-house is principally devoted to Himalayan *Rhododendrons*, of which a good collection is grown at Kew. The more tender species, together with many of their finest hybrids, are grown in this house, many of the species reaching large dimensions. The last two seasons have been particularly favourable for this class of plants, the result being a fine display of flower this last spring. Many other tender plants also find a place in this house. A large specimen of *Clematis indivisa*, trained upon wires near the roof, produces masses of its pure white flowers each spring. Another large climber deserving special mention is *Lonicera etrusca* var. *superba*, without doubt one of the finest greenhouse climbers in cultivation. *Buddleia Colvillei* has been in full flower, as also the rare yellow *Pæony* (*P. lutea*). A beautiful red *Primrose* (*Primula mollis*) is largely used for carpeting the ground amongst the *Rhododendrons*, many of the plants being quite 2 feet in diameter, and covered in the season with hundreds of flowers.

The Mexican-house is devoted to plants which require the temperature of an intermediate-house. These largely partake of a Mexican character, the south end being occupied with large Agaves, *Opuntias*, *Cereus*, &c., which are planted-out in a rockery built up of large and conspicuous pieces of limestone. The rest of the house is devoted to the culture of plants of the subtropical regions of both hemispheres. Such fine flowering shrubs as *Lagerstræmia indica*, *Brunfelsia calycina* and its varieties, Java *Rhododendrons*, *Alberta magna*, *Gardenia Thun-*

bergia, &c., all thrive and make large bushes in this house. Other results of this house have been the fruiting of such interesting plants as the Tree-Tomato (*Cyphomandra betacea*), the Mango (*Mangifera indica*), the Loquat (*Eriobotrya japonica*), one of the Papaws (*Carica cundinamarcensis*), and the *Granadilla*. *Chas. P. Raffill*.

DELPHINIUM.

AT p. 24 we noticed the receipt from Mr. Henkel, of Darmstadt, of a blue Delphinium with regular flowers almost devoid of spurs and with an increased number of petals. Each petal had a distinct claw or stalk, while the blade was marked by a fringe of orange-yellow hairs. The illustration we now give (fig. 24) shows at a a flower of the natural size seen from the side; at b a section across the flower showing the arrangement of the petals, &c.; at c a section lengthwise through the flower; and at d a detached petal. The flower is an illustration of the condition known as regular peloria with multiplication of the petals. The stamens and pistils were normal.

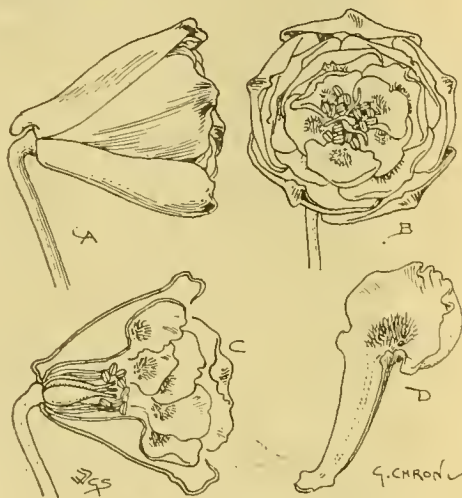


FIG. 24.—ABNORMAL DELPHINIUM.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Angraecum Eichlerianum.—Among Orchids that are not generally cultivated is this species, a fine plant of which is now in bloom here. The plant is about 6 feet in height, and the pretty, greenish-white flowers, thirty-two in all, are produced, some in pairs, others singly, from the top to the base of the plant, which is therefore a lovely and attractive object. The plant being of scandent habit, should be fastened to a Teak raft, and fixed firmly into a pot filled with crocks, covered thinly with living sphagnum-moss. It should be stood in an upright position upon the stage in the hottest house, and where it can be afforded shade at all times. As the plant does not appear to require any period of rest so far as growth is concerned, it should be well sprayed over with tepid rain-water whenever it appears to be in the least degree dry.

Sarcanthus peninsularis.—This charming botanical species is now in flower. The individual flowers are small, but the gracefully-crowded racemes, of which there are about three dozen on the plant, have a very inviting appearance. This species requires similar treatment to that recommended for *Angraecum Eichlerianum*.

Such plants as *Spathoglottis aurea*, *S. Fortunei*, *S. Lobbi*, *S. Kimballiana*, *S. plicata*, *S. Vieillardii*, and the hybrid *S. aureo-Vieillardii*, being now in full growth, they will need liberal supplies of water. The plants should be suspended on the shady side of the warm house, and as the grass-like foliage is liable to the attack of thrips,

periodical spongings and vaporisings are necessary. The same cultural remarks apply also to *Geodorum citrinum*, *G. pictum*, *G. Augustii*; also to the rare *Eulophia guineensis* and *E. congoensis*, both of which are producing flower-spikes from the base of the half-developed growths.

Schomburgkias.—Such *Schomburgkias* as *S. tibeticus*, *S. Kimballiana*, *S. Humboldtii*, *S. Sanderiana*, and *S. Thomsoniana*, which have hollow, horn-like pseudo-bulbs, require much sunshine at all times, and as they are now commencing to grow, should be placed in the lightest position available in the hottest house. They thrive equally well either in pots or baskets, but prefer a shallow rather than a deep rooting medium, and this should consist of equal parts coarse peat and a little sphagnum-moss. Abundance of water is necessary all through the growing period, but when the new pseudo-bulbs are fully made up afford less moisture, and place the plants where they will obtain uninterrupted sunlight and plenty of fresh air. It is essential that the new growths should become thoroughly matured, and that the plants be afforded a long decided rest to ensure their flowering regularly. Those species with fusiform pseudo-bulbs, as *S. Lyonsii* and *S. undulata*, will grow under similar conditions, but prefer a greater depth of soil. *S. crispa* succeeds best in the temperature of the *Cattleya*-house if afforded a very light position.

Microstylis.—Very pretty and interesting are some of the varieties of *Microstylis* which flower at this season. Some of them have curiously constructed flowers, and others possess charmingly coloured foliage. The genus is a large one and contains many species with little beauty to recommend them, but those following are worth growing: *M. Scottii*, *M. purpurea*, *M. bella*, *M. congesta*, *M. metallica*, *M. discolor* and *M. Wallichii*. *Microstylis* require similar treatment and compost as are given to the *vestita* section of *Calanthes*.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Strawberry-plants.—Proceed with the work of layering runners, so that the quantity of young plants required for making new beds to fruit next year may be obtained as early as possible. Strong, well-matured crowns are required to produce heavy crops in the first year after layering, and especially of the variety *Royal Sovereign*. Peg the runners in small pots containing sweet, moderately rich soil, pressed firmly, and leaving ample room for the application of water. Select strong runners from the most healthy plants; any which have not been allowed to bear fruits would be preferable. Layers already made will need to be supplied with water during dry weather. If time permits and water is plentiful, soak the old plants as well. Plants of the variety *Royal Sovereign* for supplying early fruits should be put out at 18 inches apart on a warm border, the soil of which has been afforded a moderate amount of manure. Let the ground be made firm, and at the time of planting the soil of the border and the roots of the plants should be in a thoroughly moist condition. Much injury from drought is sometimes sustained by *Strawberry* plants immediately after planting.

Strawberry Plants that have Fruited.—As soon as the plants have ceased bearing, provided no further layers are required, remove all runners and some of the old leaves. Pull out any weeds and rake away any rubbish there may be, then slightly loosen the surface of the soil, apply a sprinkling of artificial manure if needed, and mulch with fresh manure. Should the weather continue dry soak the plants thoroughly with water in order to encourage new growth as soon as possible. If the land is very light and the plants have been heavily cropped, repeated waterings will be essential. A quantity of young plants should be raised yearly, and the layers should be obtained from fresh stock occasionally.

Early Peaches.—Thin out the fruits of these for the last time; such varieties as *Alexander*, *Waterloo*, &c., ripen up very quickly, and if neglected the fruits are apt to be small. Do not overcrop, but regulate the quantity of fruits according to the strength and vigour of each

tree. Soak the soil about the roots thoroughly with manure-water, and keep the foliage clean and free from red-spider by frequently syringing them with clear water. Remove any further shoots that are not needed and shorten the sub-laterals. Keep the leaders neatly secured to their respective positions, and gradually expose any fruits that are shaded by leaves, so that they may obtain better colour.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Blanching Celery.—This operation requires more time and attention than are sometimes afforded, and the result is that an inferior article is sent to table, when it might have been made equal to the best. No doubt the character of the soil and situation has much to do with the growth of the plant, but a well blanched and crisp head, having a nutty flavour, though of only moderate size, is preferable to a large, coarse head, which unless ground by an expert is often deficient in many points of quality, "blanching" being usually one of these. In order to obtain the best results let the work of "earthing-up" be done often and moderately, drawing a little earth only to the plants on each occasion. Before drawing any soil towards the plants, examine the lines, and remove all the short leaves and any extra growths that appear round the base; then tie a piece of matting round each to keep the leaves erect and prevent the soil getting into the heart of the plant. Under no circumstances tie it up too tightly, but allow ample room for the centre leaves to make their way to the light without getting crippled. After the work has been completed, and should the ground be dry, afford the roots a thorough soaking of water. If this is not done previous to drawing the soil to the plants it will take a greater quantity of water to do it afterwards. An hour or so after the watering has been done, if there are many slugs, it will be necessary to apply a dressing of lime along the sides of the trenches. On light, fine sandy soil the work of "earthing-up" can then be commenced. Break down the sides of the trenches with the spade, and make fine; then take hold of each plant singly in one hand and draw the soil up to it with the other, making it sufficiently firm to keep the plant upright, and the leaves in the position in which they have been left by the hand. On soil of a stiff, clayey nature the work is not so easily managed. Slugs usually find a shelter in the crevices of the soil, and injure the plants to such an extent that it is sometimes necessary to dig a dozen heads before getting three that are fit for table. To prevent such injury we have tried many expedients, paper collars amongst the rest, but nothing has had so good an effect as sawdust. In the use of this it is not necessary to fill up the whole trench, but to proceed as follows: Break down the sides of the trench in the usual way; this will form a backing for the sawdust, 3 or 4 inches of which should be pressed round the neck of each plant, adding the same in height as the plants require it.

Work in General.—Any arrears of planting should be finished as soon as the weather will allow. Attend to the stopping of Tomatos, and if Vegetable-Marrows are not setting their flowers well, pollinate the female flowers in the morning. Sow seeds of Lettuce and Radishes for succession.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Vines intended for forcing early next season.—The canes should be well ripened by this time. Keep the atmosphere of the house cool and dry. Afford no more water to the borders than is sufficient to keep the roots in a healthy condition. All laterals should be closely stopped. If the borders are in an unsatisfactory condition, this will be found a convenient season to make preparation for lifting the roots. Obtain some fresh loam and clean drainage material. The outside border need only be operated upon this season, and the inside border next year. In numerous instances some difficulty is experienced in procuring suitable material for the making of new, or even the renewal of old borders. In such circumstances,

borders in a sour state may be considerably benefited as follows: Open a trench the length of the border 12, 18, or 24 inches wide, in proportion to its extent; then remove the soil and drainage the full length and depth, so that a free circulation of air may pass through and under the border. Remove all mulching and inert soil that is near to the roots, and afford full exposure to sun and air for a time. The border will then crack in all directions, and these cracks should be filled carefully and well with $\frac{1}{2}$ -inch bones, charcoal, and fine soil mixed together, the greatest proportion being bones. Afford a light watering, and cover with damp mats, to guard against excessive drought or heavy rains.

Vines for forcing early that were not forced early last season.—When the crop of fruits has been cleared, thoroughly clean the rods and foliage by repeated fumigations and the use of the syringe. Should the canes appear insufficiently ripened (matured), the house may be kept a little closer for a time during the day, to enable the canes to make plump buds. Sufficient moisture in the atmosphere and at the roots will be needed to keep the foliage in good condition. Should the weather be cold and wet, afford fire-heat during the day, accompanied by abundant ventilation; and after the canes have become fully matured, give full ventilation at all times.

Melons.—Guard against over-cropping, as one of the chief causes of bad finish and indifferent flavour in the fruits, besides being highly prejudicial to the plants. Unless the plants are very strong, two or three fruits will be found much more satisfactory than a larger number. Endeavour to keep the foliage in good condition until the fruits have ripened, failing which high quality cannot be expected. Afford copious supplies of diluted drainings from the stables to plants swelling fruits, applying the liquid at the same temperature as that of the atmosphere of the house. Damp all the available surfaces with liquid manure at closing time. Expose the foliage to the light. In houses where fruits are ripening, keep the atmosphere dry, and maintain a constant circulation of dry warm air, which will greatly improve the quality of the fruit.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Borders of Herbaceous Plants.—Any such borders on the sides of the kitchen-garden walk that are backed by pyramidal fruit-trees will require to be afforded water, as they are suffering from the effects of dry weather. This is the fourth week since much rain has fallen. As the plants pass out of flower cut them over and afford them at once a good mulch of rotten manure. Attend to the staking of other plants, and where there is Box-edging to the paths, be careful that the plants are not permitted to hang over or touch the Box, or they will soon disfigure it. Use the hoe over the surface of the ground, and any weeds that are seeding should be cleared away after they have been displaced by the hoe. The seeds of some of the newer or choicer varieties it is wished to perpetuate may be gathered when ripe. Place them in a canvas bag and label them; they will then be ready for sowing after a few weeks' time.

Dahlias.—These should be thickly mulched with fresh horse-manure, if possible, and supplied with water. Regulate the shoots and pinch off all deformed flowers. If Pompon varieties are required for exhibition the flowers should not be thinned severely, neither do they need so much feeding, because small refined flowers are preferable. The flowers of the "Show" Dahlia being heavy, require to be tied up separately, and the plants need much water. The "Tom Thumb" and dwarf bedding Dahlias are very bright when massed in beds—these are now growing well and will give good results after a few weeks' time.

Roses.—Fully-blown flowers may be gathered before the petals fall and be spread out thinly on a mat in a cool frame to dry, where they must be turned over every day. Do not expose them to hot sun too much or the flowers will lose their aroma. Dried flowers are appreciated for use in the dwelling rooms. Seed

pods should be cut off at the same time, that the second crop of flowers may have a better chance. The present is a good time to afford the beds a dressing of ichthemic guano or other stimulant, but water should be applied after the manure. The fly has just made its appearance, and it will be necessary to syringe the plants with quassia water.

Evergreen Shrubs that were transplanted from the flower-beds last spring, and are required for a similar purpose in the autumn, must be attended to by syringing and watering as each may require. The growths also may need to be tied in and regulated. They may be syringed with weak Quassia-water to keep them clean when the plants get pot-bound and dry. If any of the plants are "pot-bound" and become very dry, take them out and immerse them in a tub of water for several hours.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Souvenir de la Malmaison Carnations.—These and other summer-flowering varieties are passing out of flower, and preparations should at once be made to raise the plants for flowering next season. The most simple method of propagation, and the one generally adopted at this season, is that of layering. A frame or pit which has been occupied by early vegetables or salads presents the most ready means, as it will without further preparation contain the necessary depth of soil. After well loosening the soil with a fork, the plants should be turned out of their pots and planted in the frame in a sloping position, in order that the shoots which are to be layered may lie upon the soil. In some instances the soil in the vegetable-frames may be sufficiently fine to be used for the actual layering, but where this is not the case a finely-sifted compost must be prepared, and a small quantity placed around each plant after it is planted out. Use the healthiest plants to propagate from, and if they are infested with insects they should be cleansed before planting them. Choose plants with shoots of a medium length, for if these be too long a proportion of the plants will flower prematurely, and if too short it is difficult to layer them effectively. Remove the leaves from the base of the shoot that is to be layered as far as the third or fourth joint from the point. Then with a sharp knife make an incision on the underneath side of the shoot, drawing the knife in the direction of the point of the shoot, and cutting through one joint. A slit an inch in length will be sufficient. The shoot should then be firmly but gently pegged down among the fine soil, which should cover the base of the layer. After layering, give the soil a good watering. The subsequent treatment consists in keeping the soil moist by sprinkling with water through a fine rose, affording shade during sunshine, and keeping the frame somewhat close until rooting takes place. The layers should then be severed from the plant, and after two or three days lifted carefully and potted into $3\frac{1}{2}$ or 4-inch pots. Water the plants and place them in a cold frame, which should be shaded during sunshine and kept somewhat close for a few days, after which air must be freely admitted.

THE APIARY.

By EXPERT.

In some parts of England bees appear to be unusually busy throwing out swarms, and when honey is required the swarms should be returned to the parent stock in the evening, after taking away the queen. In hives where an extra large quantity of drones appear, the hive should be examined and the brood comb cut out and destroyed, and where possible the queen taken away and a young one introduced in her place. Old queens are often found to produce an unusual number of drones. Wax grubs should also be destroyed before they destroy the whole colony. All appliances in the apiary should be dipped into a solution of Izal; one cannot be too particular about this, especially in goods bought secondhand. Stocks which are not working in the sections should be examined as to the cause, and in any case of suspected foul brood immediate steps should be taken to stamp the same out. Sections should be placed in a secure place as soon as they have been removed from the hive, and in the meanwhile look out for a market.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

- TUESDAY, JULY 26**—Roy. Hort. Soc. Coms. meet; also Nat. Carnation and Picotee Soc. Show in the New Hall, Vincent Square, Westminster.
- WEDNESDAY, JULY 27**—Horticultural Club Annual Outing. Cardiff Flower Show (2 days). Newcastle - on - Tyne Flower Show (3 days).
- THURSDAY, JULY 28**—Chesterfield Hort. Soc. Show. Soc. Franc. d'Hort de Londres visit Burnham Beeches.
- FRIDAY, JULY 29**—Roy. Bot. Soc. lecture.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —63.3°.

ACTUAL TEMPERATURES:—

LONDON.—July 20 (6 P.M.): Max. 78°; Min. 59°.
July 21.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden (10 A.M.): Bar., 30.1; Temp., 71°; Weather bright sunshine; rain wanted.

PROVINCES.—July 20 (6 P.M.): Max. 75°, Home Counties; Min. 56°, N. of Ireland.

The Beech Coccus.

The appearance of a white, cottony fluff on Beech-trees is so common that most people will pass it over as of little moment. Those, however, whose investigation is less superficial will not take matters so easily, and will be interested in the remarks made by our correspondent Mr. BROTHERSTON, who writes:

At present there is not a little consternation evinced concerning the safety of Beeches on account of the prevalence of what used to be called Coccus, but now *Cryptococcus Fagi*, on many trees. It is a question if this almost microscopic insect effects the amount of mischief that is laid to its charge, and on account of which so much fear is entertained concerning the very existence of so many specimens of this noble tree. For one thing it is no new pest, old people have known it all their lives, and not only that, but have an acquaintance with trees that have sheltered and fed generation after generation without any apparent distress to themselves. I have watched a young tree for more than a quarter of a century, and it has gone on increasing in size and stature all that time, and at present is in the perfection of health, notwithstanding the innumerable colonies of the Beech-coccus that are congregated on its bark. The only difference discernible between unaffected trees and this is that the bark of the latter is covered with low warty excrescences in which the greater part of the coccus congregates. These warts are no doubt a result of the insects' possession, but that they are harmful is another question. If they are responsible for the decay of the bark of Beech-trees and their subsequent death, one would expect that some indication of bark decay would be apparent in this instance. But it is not.

Still more interesting is the fact that old Beech-trees in the vicinity of this young one occasionally die as they stand, and some of these have not one coccus on their bark. Two old trees within less than a stone's-throw indicate by their foliage and growth that two to five years hence will see the limit of their life. One of these has a very few cocci here and there on its bark, which is dying in patches; the other is quite free from coccus, and it has reached the

stage when the bark is so badly decayed that pieces are falling off. Experience shows that trees such as these are decayed at the root—a result of old age, possibly accelerated by unsuitable soil, especially when too wet. It seems to me that if the insect is indigenous, then there is not much fear of its being greatly mischievous to its host. We know that its relatives, the Kermes of the *Quercus coccifera* and the cochineal insect in the case of *Opuntia*, effect no appreciable harm on these plants.

Happily, the insect is not difficult to kill; but it possesses two incidental environments that render it difficult to get at to kill. The one is the white woolly covering with which the smallest solitary individual envelops itself, and which in the case of colonies is present in greater quantities, acts as a protection against the greater number of insecticides. The other is the almost impossibility of getting an insecticide into the intricate recesses of the bark in which the insect hides itself. The cheapest and most effective killing-agent is undoubtedly petroleum. One part of the latter to 200 parts of water, or rather soapy water, kills the insect, but it is not sufficiently strong to penetrate the inner parts of the bark, and a much larger proportion of petroleum is therefore needed. When applied hot, or at 110° to 150°, the penetrating power of the mixture is greatly increased, and where it is possible to use a syringe or garden-engine to apply it with, either should be used. Spraying-machines fitted with rubber cannot be employed in the use of petroleum-mixtures without damaging the fittings. Usually an ordinary whitewash-brush will be found the most convenient tool with which to apply the insecticide. With that, a long ladder, a galvanised pail to hold the liquid, and a double hook to hang it on a step of the ladder, the apparatus is complete. The operator commences at the highest point, applying the liquid freely, and works downwards, missing no part of the bark. Wherever the mixture reaches the insects will be destroyed. But they are certain to be replaced by others, and therefore it is necessary to repeat the application till all are destroyed. Where only a few trunks are infected, hot soap-suds with petroleum added is a capital killing agent. Pine-aphis syringed with a mixture of soap-suds and petroleum are instantly destroyed. Years ago I had a number of Scots Fir and Abies nobilis to clear of this insect, and three applications have left the trees quite clean ever since. I have found it equally effective with the insects that infest Abies Nordmanniana, and I believe it will be equally valuable in the case of other insect-infected trees.

MAGNOLIA CONSPICUA (see fig. 25).—The exigencies of a weekly paper have to be met, regardless of anachronisms, which must be our excuse for giving in a number when a July sun is shrivelling the foliage of many trees, an illustration of a tree whose blooms we look to as a sign that spring is at hand. *M. conspicua* is one of the deciduous species flowering before the leaves are fully out, and always excites admiration. There is a fine example at Gunnersbury House, which was figured in our issue for March 9, 1891, when we took an opportunity to review the whole of the deciduous species now in cultivation. To that article we may refer for full particulars. The tree we now figure is in the gardens of Col. PH. ROBIN, La Fantaie, Jersey, by whose gardener the photograph was sent to us.

THE HOLLAND HOUSE SHOW.—As was stated on p. 47 of our last issue, Messrs. BARE & SONS, King Street, Covent Garden, London, were awarded a Silver Cup for a collection of hardy flowers and pigmy trees. The exhibit was not described in our general report owing to an inadvertency.

TOWN TREES.—We have often occasion to mention those trees which thrive best in the vitiated air of towns. Everyone knows and values the Plane, but it is not everyone that thinks of the Fig, and yet those that pass through the Temple or Finsbury Circus, and various other open spaces in London, must notice how superior it is to the Lime or to the wretched Lilacs and Privets found in such situations. The Mulberry is also a good town tree, and the Ailanthus may be recommended. Ginkgo is excellent, but rarely seen.

KENDIR TOWIKA.—Under this name M. MICHOTTE calls attention to a plant grown in Turkestan, the fibre of which is used for the fabrication of fishing-nets. The plant turns out to be *Apocynum sibiricum*. Its culture might be economically important, as in the manufacture of paper, if the cost of production could be lessened. Full details are given in the *Revue des Cultures Coloniales*.

CAPE TOWN INDUSTRIAL EXHIBITION.—An international exhibition on a large scale will be held in Cape Town from November to February inclusive. This will be of great importance in developing a market for British goods. The London office is at Palmerston House, Old Broad Street. The managing directors for the United Kingdom are W. J. AYLWIN and J. REYNOLDS.

BETULACEÆ.—Mr. HUBERT WINKLER contributes to ENGLER's *Pflanzenreich* a monograph of this family, including the Coryleæ, as well as the Betulaceæ proper. To the first group belong *Carpinus*, *Ostrya*, *Corylus*; to the second group, *Betula* and *Alnus*. The commentary is in German, but the description of the genera is fortunately in Latin. A group containing the Hornbeam, Hazels, Birches, and Alders is one of great importance, economically as well as botanically. The monograph is copiously illustrated, and has a full index.

MANURING SUGAR-CANES.—In a pamphlet containing a summary of the results of the manurial experiments carried on under the direction of the Imperial Department of Agriculture (for the West Indies) at Antigua and St. Kitts-Nevis during the year 1902–3, the chemist in charge of experiments (Mr. WATTS) pronounced the following opinion:—"It will not be found to pay to apply artificial manures to plant Canes in the Leeward Islands, but planters are advised to concentrate all their efforts on the preparation of the soil by cultivation and the use of pen-manure. With Ratoons, however, the case is different. Maximum crops can only be obtained by the use of artificial manures." For these Mr. WATTS recommends "the application of 2 to 3 cwt. of nitrate of soda, or 1½ to 2½ cwt. of sulphate of ammonia, with which ¾ cwt. of sulphate of potash and 1½ to 2 cwt. of either basic superphosphate or superphosphate may be employed with advantage. It is clearly proved by these experiments that nitrogen in a rapidly acting form is required for Ratoons."

LONDON CITY MISSION VISIT BUCKLEBURY.—On Thursday, July 14, the generous hospitality of Mr. and Mrs. ARTHUR W. SUTTON was extended to missionaries of the London City Mission. Over 400 were entertained for the day at Bucklebury Place, the host and hostess personally doing everything possible to make the outing a happy one. The Archdeacon of London was among their special guests.

MIDLAND AGRICULTURAL AND DAIRY INSTITUTE.—The annual meeting and opening of extensions by Sir THOMAS H. ELLIOTT, K.C.B. (Secretary to the Board of Agriculture), will take place on July 27, at 3.15 p.m., when the certificates granted during last session will be distributed. The nearest railway station is Kegworth (Midland Railway), 1½ mile.



FIG. 25.—FINE SPECIMEN OF *MAGNOLIA CONSPICUA* FLOWERING AT LA FANTASIE, JERSEY,
THE RESIDENCE OF LT.-COL. PH. ROBIN. (SEE P. 58.)

ASSOCIATION OF ECONOMIC BIOLOGISTS.—From Mr. W. E. COLLINGE, of the University of Birmingham, we have received the following communication:—"For some time past workers engaged upon various problems connected with economic biology have felt the need of some organisation whereby they could meet from time to time to discuss these different problems with fellow-workers, so as to bring out suggestions and to prevent unnecessary duplication of work, and generally to promote and advance the economic side of biological science. With a view to the formation of such an association of economic biologists, I have briefly discussed the matter with a few fellow-workers, and I shall be pleased to receive an expression of opinion or suggestions from any others. The idea at present in my mind is an association somewhat on the lines of the American one, which would include and welcome all investigators and teachers in economic biology in its widest sense. Mr. FRED V. THEOBALD (Wye), Mr. ROBERT NEWSTEAD (Chester), Mr. A. E. SHIPLEY (Cambridge), Mr. CECIL WARBURTON (Cambridge), and others have expressed themselves in favour of some such scheme."

GARDEN AND FARM PRODUCE BY RAIL.—That was a happy thought of an official of the Great Eastern Railway Company to carry small parcels of produce from homesteads to houses in town at a cheap rate, to be delivered without extra charge within the five-mile radius. The idea took a good grip on public attention, and recently the Traffic Manager informed us that the number of such parcels carried during the first six months of the present year was exactly 94,000, compared with 91,000 for the same period last year, or an increase amounting to 3,000 parcels. Only success can be desired for the scheme.

ENGLISH ARBORICULTURAL SOCIETY.—A visit was paid on the 2nd inst. to Bayham Abbey, Sussex, the seat of the Marquis CAMDEN, to inspect the woods and coppices. Mr. GEORGE MARSHALL, the President, and a numerous company attended. The Chestnut coppice is cut over every eleven or twelve years. Regret was expressed that owners of forest-land were now planting Chestnut instead of Oak, so that Oaks were becoming scarce. A German expert who was present congratulated Lord CAMDEN's agent on the good management of the estate. It is to be hoped that this meeting will ensure an accession of new members.

FRUITS, NUTS, AND VEGETABLES FOR FOOD AND MEDICINE.—We have received a pamphlet by Mr. BROADBENT on *Fruits, Nuts, and Vegetables; their Uses as Food and Medicine*, which seems in refreshing contrast to the fervent writings of fanatic vegetarians. It is quite true that vegetable products have many virtues when well grown and well cooked, and that "it would be a great boon if it were possible to purchase vegetables grown with properly-matured manures and at moderate prices." The little book mentions most of the well-known fruits, nuts, and vegetables severally, with notes on their respective virtues, and hints for growing, cooking, or serving them.

CONNECTICUT AGRICULTURAL STATION.—The twenty-seventh report of the Connecticut Agricultural Experiment Station (for 1903) reveals the valuable work undertaken in analysing fertilisers, feeds, and other products, test-seeds, &c., for the citizens of Connecticut. The results of analyses and investigations of general interest are published in bulletins and collected in the volume before us. We note, in addition to the above-named subjects, information concerning insect and fungus pests, tobacco, and so on. Where necessary, excellent illustrations supplement the text.

POMPEIAN FLORA.—Dr. WITTMACK contributes to the *Gartenflora* an interesting description, with lists, of the vegetable remains found among the ruins of Pompeii. These throw considerable light on the knowledge of the plants cultivated by the early inhabitants of that part of Italy. Dr. WITTMACK bases his observations largely upon researches that have previously been made, and confirms and adds to these notes of his own examination, microscopical and otherwise, of the seeds that have been found among the *débris*. Out of 160 of these remains, all of which were charred and many so caked together as to be unrecognisable, Dr. WITTMACK identified 130 as seeds and fruits. Considerable allowance had to be made for the change produced by the burning, which had reduced the seeds to about one-third of their natural size, caused complete separation of the embryo, and had loosened the husk (epispem) from the rest of the seed. Among the frescos many are of a fanciful nature and represent physiological impossibilities, and others are inspired by a knowledge of the flora of the Nile. They are therefore not to be depended upon as guides to the botany of the time. No remains of any species of Orange have been found, and the white Mulberry, so notable a feature of the flora of the Italy of to-day, is absent altogether, though the black Mulberry exists in abundance. In one instance pickled Olives were found enclosed in a glass jar, and they still retained something of their original flavour. Needless to say, all the plants of American origin, such as Agaves, Cactuses, Maize, and Tomatos, that are so largely grown in Italy nowadays, are missing. Dr. WITTMACK found most of the best known cereals, many roots, fruits in considerable variety, among them being Apples, Plums, Pears, Almonds, Pomegranates, and Medlars, Mustard, several species of Iris, Gladiolus, Narcissus, several Palms and Conifers, Vine, Ivy, and other familiar plants. The article is completed by an ample bibliography of Pompeii, in which further details are to be found of this most interesting subject.

NATIONAL POTATO SOCIETY.—The schedule of the National Potato Society's Show, which is to be held at the Crystal Palace on October 11 and 12, has been issued. Many of the large seed firms give special prizes, and a particularly interesting class is that for the best exhibit of Potatos in the show, the prize in which is the cup, value 10 guineas, presented by Sir JOHN T. D. LLEWELYN. Copies of the schedule may be had from Mr. WALTER P. WRIGHT, Postling, Hythe.

CUCUMBER-GROWING UNDER GLASS.—An excellent treatise on this subject is published by Mr. Fabius, Redlands Nursery, Emsworth, Hants. To be a successful Cucumber-grower, says the author, all depends upon the man; no amount of advice, instruction, or assistance can be of any use in the absence of that one condition. The publication of this little book might therefore seem superfluous; but it is really far from being so, and the most severely practical man will derive many a hint from these pages. The whole routine of cultivation, from the sowing of the seed to the cutting of the fruit, is clearly expounded, and the questions relating to soil, heating, and other essentials are fully entered into. Hygiene and preventive measures are most important in Cucumber-growing, for if the soil contains eel-worms, or fungus-spores are introduced with manure, the cultural conditions which suit the Cucumber also favour the fungi. The soil should be sterilised by steam if possible, if not by stacking the loam in layers with gas-lime intervening, and keeping it at least twelve months before using it. The close, stuffy atmosphere of a Cucumber-house is most favourable for the growth of fungus-moulds of all kinds; the importance of free ventilation is thus emphasised.

Overcrowding the plants of course favours the spread of the fungus. The maintenance of an even temperature is also of primary importance, and the watering should be most carefully attended to. Think first, and water afterwards, is Mr. Fabius' advice, and excellent it is. Indeed, we have rarely seen a book in which science (that is, knowledge derived from careful observation) has been more judiciously applied to practice. If all "book-knowledge" were of this kind, we should not hear much about the uselessness of book-learning.

GARDENERS' ROYAL BENEVOLENT INSTITUTION: BRISTOL AND BATH AUXILIARY.—We are informed by Mr. J. MILBURN, Superintendent of the Victoria Park, Bath, that at the recent Rose show at Bath (July 14), the Committee of this local Auxiliary had a stall for the sale of flowers, &c., to raise funds on behalf of the Institution, and that by such means a sum of £15 ls. 4d. was obtained. The Committee desires to thank exhibitors and others who helped by gifts of flowers on this and previous occasions. The example set at Bath and some other places might be adopted advantageously at nearly all horticultural exhibitions.

A GIANT CARNATION.—We recently saw at Dover House Gardens, Roehampton, what is probably one of the largest specimens of any type of Carnation in the country. The plant was of a variety of *Souvenir de la Malmaison*, and had about 190 growths, each of which was secured separately to a neat, thin stake. Every growth produces at least one flower, therefore the plant has yielded nearly 200 large flowers. The specimen is cultivated in a pot measuring about 15 inches in diameter. Mr. J. F. McLEOD's success in the cultivation of Carnations is well known, and the collection under his charge this year has been specially good. On many occasions he has cut some 300 flowers at one time to send to Mr. J. PIERPONT MORGAN, who has a very high appreciation for this type of Carnation.

PUBLICATIONS RECEIVED.—*Cassell's Popular Gardening*, Parts 3 to 9.—Circulars and Agricultural Journal of the Royal Botanical Gardens, Ceylon, Vol. II., No. 7. *Castilloa or Panama Rubber*, by J. C. Willis and Herbert Wright; No. 8, *Carda Rubber*, by the same authors; No. 9, *Shal-hole Borer*, by E. E. Green; Nos. 10 and 11, *The Royal Botanic Gardens, their Organisation, Work, and Relation to the Public*, by J. C. Willis; *Black Grub or Cutworm*, by E. E. Green.—From the Royal Botanic Gardens, Ceylon. Administration Reports, 1903. *Report of Mr. J. C. Willis, Director.*—*Agricultural Bulletin of the Straits and Federated Malay States*, April. Devoted chiefly to articles on the Rubber industry. *The Agricultural Gazette of New South Wales*, May. With notes on Forestry, Viticulture, &c., and an article by W. S. Campbell on Practical Vegetable and Flower Growing.—*The Agricultural Journal of the Cape of Good Hope*, June. Mr. C. P. Lounsbury contributes a paper on Revised Plant Import Regulations.—*Annual Administration Report of the Forest Department of the Madras Presidency for the year ending June 30, 1903*. A record of twelve months' labour, and of the condition of the State forests during 1902 and 1903.—*Report of Work of the Agricultural Experiment Station of the University of California*. From June, 1901, to June, 1903. In the Botanical section much valuable work was done in identifying and reporting upon specimens. Viticulture also received much attention. United States Department of Agriculture: *Some Miscellaneous Results of the Work of the Division of Entomology*. An illustrated record of valuable investigations.—*Report of the Work and Regulations of the Technical Instruction Committee, Essex Education Committee*, 1903. Four short horticultural courses were held, and the quality of the work done was quite up to the high standard of previous years. Ten students did well at the Royal Horticultural Society's examination. In the agricultural section the laboratory and field work was satisfactory. *The Agri-Horticultural Society of Madras, The Annual Meeting*, March 29, 1904. With a brief and satisfactory report for the year then ended.—*The Transvaal Agricultural Journal*, April. A quarterly periodical. The present number contains Botanical Notes, Vine Growing, The Persimmon, &c. The notes on Native Economic Plants, by J. Burt-Davy are excellent, and so are the plates that illustrate the journal. We may have occasion to refer to this, and other publications at greater length on another occasion.

STRAWBERRY "THE ALAKE."

IN fig. 26 is shown a fruiting spray of the new Strawberry "The Alake," a variety exhibited by Messrs. Jas. Veitch & Sons at the Royal Horticultural Society's meeting on June 28. The variety was raised from a cross between Frogmore Late Pine and Veitch's Perfection, and was recommended an Award of Merit by the Fruit and Vegetable Committee. The fruits are of very large size, and, as will be seen from the illustration, are frequently very irregular in outline. They possess rich colour and good flavour, and the variety is apparently a prodigious cropper.

dissolve tough meat. The emanations from this tree will dissolve and digest albumen, and it is the custom of the natives to hang meat and chickens in the branches of a tree to render them tender and edible.

The uses of the Papaw are numerous and varied. The bark is used in the manufacture of ropes; the fruit is edible, and is sweet, refreshing and agreeable.

The ripe fruit is eaten as we eat Melons. Salt enhances the flavour, and some users add sugar. The fruits must be perfectly ripe when eaten raw, as when green they contain a strongly-marked acrid principle. The colour of the ripe fruit is more or less that of the yellow Musk-

The seeds are eaten as a delicacy. They have quite an agreeable taste, something like Watercress, and with a piquancy slightly suggestive of the Mustard family. Macerated in vinegar, they are served as a condiment.

In hot climates meat must be eaten immediately after slaughter. (It often reaches the pot an hour after killing.) The Papaw helps to overcome this. Rubbed over tough meat it will render it soft, and change a piece of apparent leather to a tender, juicy steak. It is put into the pot with meat, enters into soups, stews, and other dishes, which are made more edible and digestible.

NOVA SCOTIA.

Report of the School of Horticulture of Nova Scotia, by Prof. Sears, Director.—"The past year has been the best in the history of the School; the experimental orchard at Wolfville is beginning to give some useful data for the present and promise for the future, while the mole orchard-work has put us in touch with the fruit interests all over the provinces." With regard to the fruit season: "Never was there a season that opened so discouragingly and closed so successfully. The crop is large and of the finest quality."

WEST INDIES.

Cotton Cultivation.—Recent numbers of the *West Indian Bulletin* contains a full report of Cotton cultivation in the Sea Island districts of the United States and in the West Indies. It includes not only articles on cultivation of Cotton, but also on the factories or "gineries," the pests attacking the Cotton-plant, and a great variety of information indispensable to everyone interested in Cotton cultivation in the colonies. Extra copies may be obtained from Messrs. DULAU & Co. Price 6d., post-free 8d.

Sugar-cane Diseases.—Mr. Lewton-Brain, the Lecturer in Agriculture, has published the substance of three lectures delivered by him before the Barbados Agricultural Society, under the auspices of the Imperial Department of Agriculture, at the head of which is Sir Daniel Morris. The diseases referred to attack canes to a greater or less extent in all the sugar-producing colonies in the West Indies. The root disease (Marasmius) was especially prevalent at Barbados last year, and it was largely due to the attacks of this fungus that the sugar crop of 1903 (35,000 hhds.) was lower than any during a period of thirty-four years. It was even lower than in 1895, when the ravages of the rind fungus (*Trichosphaeria*) reduced the normal crop of 56,000 hhds. to 36,000 hhds., and led to the practical abandonment of the Bourbon cane. The principal canes now cultivated are the White Transparent and seedling canes. A conservative estimate, after making every allowance for unfavourable seasons and other circumstances, has placed the loss due to the attacks of fungoid diseases at Barbados during 1903 at 10,000 hhds., of the value of £70,000. If we take into account the loss sustained in molasses also, the total loss in 1903 would not fall far short of £100,000. It was with the view of aiding the planter to control the diseases affecting his crops, especially in these days of low prices, that the lectures delivered by Mr. Lewton-Brain were organised. It is recommended that tops for planting should be selected from healthy canes only; that where the disease shows itself in small patches in the fields, these should be isolated by a trench (about a foot deep) dug round them, so as to prevent the disease from passing through the soil and attacking healthy canes; that all cane stumps whatsoever should be dug up and destroyed either by burning or being heaped up and treated with quicklime; and that where a field has been

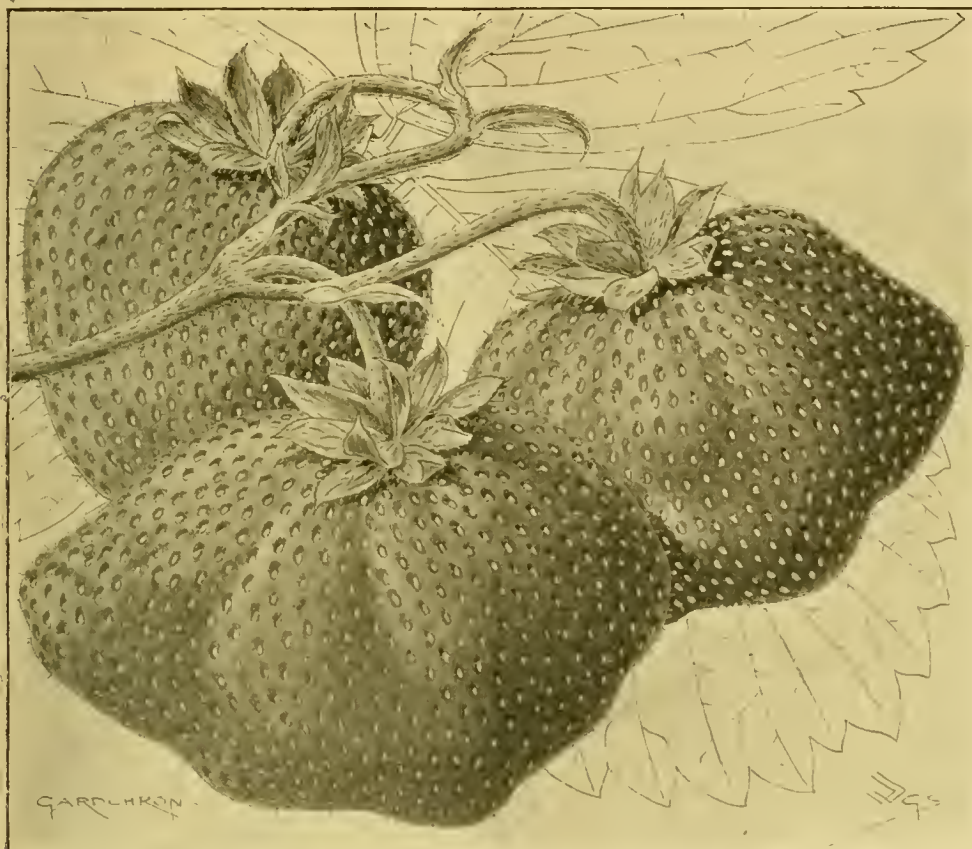


FIG. 26.—NEW STRAWBERRY "THE ALAKE."

COLONIAL CORRESPONDENCE.

AUSTRALIA.

Journal of the Department of Agriculture of Western Australia, February, 1904.—Contains various notes; a report on the Conservation of Water, by A. B. Fry; a paper on By-products of the Grape, and Gardening Instructions for March.

The Agricultural Gazette of New South Wales, February.—Contains useful information on the usual subjects. We note that a coating of boiled linseed-oil and Stockholm-tar (used in equal parts) painted over Apple-trees for 3 feet from the ground effectually protected the trees from damage by hares, and did no harm to the plants. It would probably prove equally efficacious against other pests.

THE PAPAW IN QUEENSLAND.

The Papaw is widely distributed over tropical Queensland, and is most agreeable and nutritious. Quite universal is the knowledge of the property that has given to the Papaw its world-wide fame, viz., the power of its milky juice to soften and

Melon. The sweetness of its resinous, pulpy juice clings to the tongue, and remains for some hours.

Excellent preserves are made of the ripe fruit, which for this purpose is boiled down in sugar and candied, like Citron. At the sugar houses slices of the Papaw are often seen seething in hot syrup. The slices of Melon combined with some acid fruit is made into native tarts. The fruit is also stewed and served at table. The green fruit is made into plain and spiced pickles, which are highly esteemed.

The fruit, just before ripening, is peeled and sliced, macerated in cold water, with frequent changes of water for some hours; the then macerated fruit is dropped into boiling water, boiled sharply, and served as a vegetable.

The green leaves or slices of the green fruit of the Papaw are rubbed over soiled and spotted clothes, and by its power of dissolving stains Papaw has acquired the name of "Melon bleach." The leaves or a portion of the fruit are steeped in water, and the water is used in washing coloured clothing, especially black. The colours are cleaned up and held fast.

very badly attacked by root disease it should be thrown out of cultivation in canes, treated with lime, and planted with other crops for a period of at least one year—preferably two years. These recommendations are of so simple and practical a character that no difficulty need be experienced in carrying them out; and especially, as the probability is, that they would be the means of saving a considerable portion of the loss to the sugar industry of this island, which was estimated last year by responsible officers of the Department at £100,000.

MANURING SUGAR-CANES.

From the Imperial Department of Agriculture for the West Indies we have received and acknowledged two volumes of Reports on experiments with Sugar-cane, carried on in the Leeward Islands. The important subject of manuring is

sulphate of ammonia. Remunerative results will be obtained without the use of potash or phosphate, but a small additional profit may be expected from their use: $\frac{3}{4}$ cwt. of sulphate of potash, and $1\frac{1}{2}$ to 2 cwt. of either basic phosphate or superphosphate may be employed. It is quite clear, however, that nitrogen, in a rapidly acting form, must be used if good ratoon crops are to be grown."

We have received a list of seeds available for exchange from the Botanic Gardens, Georgetown, British Guiana. Applications should be addressed to the Superintendent.

TRANSVAAL FLORA.

One of the great pleasures attending botanising trips in the country around Johannesburg is the frequency with which plants hitherto not met

seems to be a strange isolation, probably in some measure caused by the remarkable variation of soil, which show the strata plainly on some of the hillsides. As an instance of how closely some of the plants follow certain formations, I found *Primula farinosa* blooming in profusion on the limestone, its area being restricted by an outcrop of grit. *G. W., Johannesburg.*

ROSES IN THE TRANSVAAL.

Whatever may be the drawbacks in other respects in the Transvaal, the florist has nothing to complain of, and especially the rosarian. Flowers of all sorts thrive and bloom admirably, here if properly tended, and Roses bloom splendidly and for many months with little attention. All my thousands of Roses are on their own roots. I have a man now at work putting in cuttings in.



FIG. 27.—VIEW OF ONE OF THE LAST EXHIBITIONS HELD IN THE DRILL HALL, BUCKINGHAM GATE, WESTMINSTER. (SEE P. 63.)

dealt with at much length, and the results of many trials are, for practical purposes, briefly summed up thus:—"Plant canes, when the field in which they have been planted has been properly tilled and manured with pen manure, require no artificial manure. When the soil is in good condition, but it has been found impossible to give the proper dressing of pen manure, then artificial manures may prove remunerative; under these circumstances it is suggested that either $1\frac{1}{2}$ to 2 cwt. of sulphate of ammonia, or 2 to $2\frac{3}{4}$ cwt. of nitrate of soda be given in one application. A small additional profit will probably follow from the use of $\frac{3}{4}$ to 1 cwt. of sulphate of potash together with phosphate, either $1\frac{1}{2}$ to 2 cwt. of basic phosphate, or a similar amount of superphosphate. All these manures should be given early. For ratoon canes nitrogen is very necessary, and this may take the form of 2 to 3 cwt. of nitrate of soda, or $1\frac{1}{2}$ to $2\frac{1}{2}$ cwt. of

with, or passed unnoticed, suddenly present themselves in great beauty of flower, and literally covering a particular area. Some of the rarer kinds may only be found in perhaps one small patch, and although they may perhaps exist in greater quantity in some other locality, their position here seems to indicate that they are slowly dying out. Recently I found a pretty lilac-flowered *Selago* in great beauty, but very locally confined to a narrow outcrop of conglomerate at the eastern edge of the high upland plain from which the ridges and valleys of the Klipriversberg radiate into the Klip valley. I only saw the same thing once before, like a line of Heather, with the boundary as straight as if laid out with a line. The same with some of the *Gladioli*, which grow in patches. One pretty scarlet species with yellow stripes grows only in one small area. Of *Stapelia*, I have found but one patch, and with many other species there

the open ground, and at least eight out of ten of the cuttings will root, although no sort of shade or shelter is provided. During the long Rose season I cut from fifty to one hundred dozen fine blooms every day. I have great numbers of Rose "*Archimedes*," which begins flowering in September, is still finely in bloom, and will continue for more than a month; so that this Rose alone gives us flowers for over nine months every year. It is a wonderful bloomer, something like *Mme. de Watteville* in colour, but with more of a *Noisette* bud. It is excellent for button-hole flowers.

Our climate is quite different to that of the Cape. Our rainy season sets in in October and continues until April. Then for five months we do not expect a single shower. So much the better, as we get sharp hoar-frosts nearly every night, as at present, but beautiful bright sun all day and every day. *J. H., Johannesburg, May 30.*

THE LAST OF THE DRILL HALL.

ON Tuesday next the Royal Horticultural Society's Committees will meet for the first time in the new Hall in Vincent Square, Westminster, and in conjunction with the exhibits before those Committees there will be the annual display of the National Carnation and Picotee Society's show. The capacity of the new Hall will therefore be put to a somewhat severe test at the very outset; but whatever its shortcomings, there is no doubt that it will afford much better facilities for the accommodation of the Committees, and for the ladies and gentlemen who are good enough to deliver lectures from time to time. It may be here mentioned that Mr. Bidgood will at the 3 o'clock meeting on Tuesday next deliver a lecture on some of the phenomena connected with Orchid life. The lecture will be illustrated with lantern-slides, and is likely to prove very interesting.

In passing from the Drill Hall, however, it may be placed on record that, in spite of its many inconveniences, it has provided an accessible site for the holding of the fortnightly exhibitions, and having been originally recommended for temporary use only, until the Society could obtain a home of its own, it has on the whole satisfactorily fulfilled its purpose. That excellent exhibitions have been held in the building is well known to most of our readers, and a photograph, which is reproduced at fig. 27, showing a portion of one of the last that was held there, will serve to perpetuate its memory.

On Friday, after these pages have gone to press, the new "Home" will be opened by His Majesty the King. Various addresses from kindred Societies will be presented, so that the event will be a red-letter day in the Society's history.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE ROYAL HORTICULTURAL SOCIETY'S SHOW AT HOLLAND HOUSE, JULY 12 AND 13.—As a country visitor may I give a few of my impressions of this show? The leading nurserymen had fine and interesting exhibits of their various specialities. Private exhibitors were not numerous; horticultural sundriesmen were well to the fore. One exhibitor called my attention to a cage for Sweet Peas. I told him I preferred ordinary Pea-sticks. One of the best outlays I ever had for a shilling was a walk round the grounds of Holland House. To me, an old gardener of upwards of fifty years' experience, the sight of this old-world English garden in the midst of the whirl of London was a treat, possessing as I do memories of Penrhyn when visited by Her Majesty Queen Victoria and the Prince Consort; Belvoir, with Mr. Ingram in his prime; and Tortworth Court, in the days of Mr. Crump. I met the courteous superintendent of the Royal Horticultural Society, and I saw that grand old gardener, Canon Ellacombe, getting about with all the enthusiasm of a youth. I heard some one inquiring after his rheumatism; he said he had handed it over to the rising generation. I should like to see such a place as Holland House in the Canon's charge for ten years, to introduce his hardy treasures in his own way. *R. M., Newbury, July 18, 1904.*

FLOWERING OF ARUNDINARIA SIMONI.—There was considerable correspondence last year as to the flowering of *Arundinaria Simoni*; this does not seem uncommon, it has flowered with me, and the plant died; but I have this year three plants of *Phyllostachya Boryana* flowering, one established with a fine growth, and the other, newly planted, but all are looking healthy in the leaves and growing—unlike *Simoni*, which appears to have lost all life. *G. H. Palmer, Lackham, Lacock, Wilts.*

WILD CHERRY (GEAN-TREE).—While rambling recently about some of the places in the suburbs

of this city (Aberdeen), I saw what I consider a unique specimen of the Gean-tree (*Cerasus sylvestris*, or *vulgaris*) growing in the grounds of Aahgrove House, belonging to the Royal Lunatic Asylum. From the size and beauty of the tree as a specimen I think it should be recorded. Looking at the tree from the south, it is a most striking object, beautifully balanced, and, as it appeared at the time, a mass of rich white bloom (see fig. 28). Viewed from the east, the expanse of branches is greater, but its symmetry is somewhat destroyed by showing the division of the head. The stem is 10 feet long from the ground to where the two great branches divide; girth at ground, 11 feet 6 inches; girth at 5 feet up, 8 feet 6 inches; girth at 10 feet up, 12 feet; spread of branches, east to west, about 48 feet; spread of branches, south to north, about 53 feet. The height of the tree is about 50 feet. I am not aware of any specimen of this tree in the country which exceeds this, certainly not in Scotland, as far as I have information; and it would be quite

that the manure they produce is so plentiful that it can hardly be given away. No one supposes that considerations for the welfare of land cultivation and crop production will influence horsekeepers in reference to the change and almost disaster that the conversion of their vehicles into motor ones may produce. Possibly, seeing how plentiful horses seem to be, many persons may smile at the suggestion that there may become presently a manure famine. But whilst the claims of cultivators grew with the increase of population and land under cultivation, there should necessarily be a material increase in manure-production. How severely farmers would in time be hit were the demand for hay, straw, and corn greatly to decline is necessarily a matter for the agricultural interest—an interest that is always so ready to grumble, and equally ready to call upon Jupiter for help. Presently perhaps, as the manure supplies from London and great towns become less, "corners" in manure may grow up—indeed, nothing is more likely—and the



FIG. 28.—A FINE SPECIMEN OF THE GEAN-TREE IN ABERDEEN.

impossible to have a more beautiful example or a more telling object in the landscape. It is growing in a light calcareous soil overlying granite, is probably sixty to a hundred years old, and at present is in perfect health. If not damaged by accident, it is likely to grow for many years. It would be interesting to know from any of the many readers of the *Gardeners' Chronicle* of other outstanding specimens of the Gean, and how they compare with the above. *Chas. S. Francis, Aberdeen.*

MOTORS AND MANURE.—When a London jobmaster states that the introduction of motor vehicles has already taken 5,000 horses from the streets of the metropolis, the statement becomes to gardeners generally, and to market growers specially, a matter of profound interest. Practically, the question arises, What is to become of gardening generally, and market gardening particularly, if, owing to the abolition of the useful horse as a means of locomotion, the manure supply, hitherto an absolute essential to gardening, should come to an end? There are seasons when London is so full of horses

small cultivator may then have to grow his crops on starved soil, or depend on doubtful plant-feed elements, so freely boomed under the very proper designation of "artificial." If there be 5,000 horses fewer fed and bedded in London than there were a few years ago, it becomes obvious that with the growth of motor production and of electric traction that in the succeeding space of time not merely 5,000 but 10,000 horses may be displaced; and if that depletion continues, where shall we be twenty years hence? The abandonment of the horse as a means of locomotion, whilst creating a revolution in our social life, must of necessity eventually lead to the ruin of both agriculture and commercial horticulture. Doubtless the artificial manure merchants will tell us that in such case, so far as crop foods are concerned, they can supply the possible deficiency. It will be a bad day for the land in Old England if ever it has to depend on quack medicines [the term "quack" only applies to remedies of unknown composition and unauthenticated properties Ed.] for health and strength. Some day, too, perhaps the nation may be rudely awakened to the sacrifice now being

made by pouring vast quantities of plant or crop food into the sea, as is now done in the form of sewage. These things become matters not to be lightly regarded, A. D.

POTATO DISEASE.—I was much interested in the description, on p. 28, of another Potato disease. Can it be the same that has been here for several years? I saw a patch a few miles from here, a few days ago, of the variety Dalmahoy, the plants of which were worthless. I asked the owner to dig up a root, and I found what I expected, viz., numerous millepedes (*Julus pulchellus*, I believe), also a very small beetle (*Bathyscia Wollastoni*). These pests have been very troublesome here for several years, the Potato plant attacked becoming quite worthless. I always find the two pests together; they attack the old tuber (set) generally, but will affect new tubers also. When attacked some chemical change seems to set up in the old tuber. The plant that was previously healthy assumes a curled, scorched appearance, dwindles, and dies. I believe the *Julus* sets up some chemical change in the old tuber. About two years ago I sent some of the beetles by request to the insect department of the British Museum. I have found soot and lime put round each tuber when planting to be very effective in keeping the pests away. A. J. Staines, gr. to J. H. Monins, Esq., Ringwould, nr. Dover.

THE RAISING OF SEEDLING STRAWBERRIES AT MESSRS. LAXTON BROS. NURSERIES, BEDFORD.—The cross having been made and the parentage recorded, the fruit is picked as soon as fully ripe, and laid by to become thoroughly dry; the seeds are then carefully extracted and sown at once in boxes 3 ins. deep, the soil used having been first carefully baked to destroy any fungus germs and the larvae of insects. The seeds are sown thinly on the surface and lightly covered with soil. Some seeds germinate at once, some not until the spring. Mr. Laxton said that if sowing is not done by the beginning of August, it is better to delay doing so until the spring. So soon as the seedlings are large enough they are pricked off into other boxes to grow into larger size, and as soon as strong enough, they are transplanted to the open ground to mature and produce fruit. The most promising varieties are marked for trial, and half-a-dozen or so of runners laid down of each, to plant for a further trial. It is two years or practically three years before any fruit is produced and a test can be applied and a selection made. Mr. Laxton stated that it took ten years to fully test a variety, as it varies according to the character of the season. The seedlings are planted-out in pairs of lines, the lines being 2 feet apart, and the plants 15 inches or so apart in the lines. Between each pair of lines comes 4 feet of unoccupied ground for the purpose of layering. The shoots producing layers are brought out into the 4 feet space and rooted in small pots. In this way any mixture of sorts is prevented. R. D.

STRAWBERRIES.—Royal Sovereign, Fillbasket, Waterloo, and Monarch have stood the dry weather better than any other varieties, of which we have about ten. W. A. C., Shirley Park Gardens, Croydon.

Obituary.

EDMUND HYDE.—There died, on the 14th inst., at Ealing, Middlesex, in his 95th year, a gentleman who, apart from his general love of gardening pursuits, demands notice here as having been the first to suggest the use, in horticulture, of cocoanut-fibre. In some manufacturing concern in which he was associated vast quantities of cocoanut-fibre accumulated, for which there was no use, and which could not readily be destroyed. The idea occurred to Mr. Hyde that it might be serviceable as a mulch or for other horticultural purposes. With the aid of the late Donald Beaton, experiments were made to such purpose that nowadays the difficulty is to get enough of the material. It was in Mr. Hyde's garden that plants of the wild form of *Primula sinensis* were first flowered in this country.

DAVID MITCHELL.—The death is recorded in the *Journal of Horticulture* of Mr. David Mitchell, formerly gardener to the Duke of Hamilton, and subsequently in business as a nurseryman and auctioneer. He died on the 14th inst., at the age of seventy-nine years, at Comely Bank, Edinburgh, where he lived for several years past in comparative retirement.

SOILS AND MANURES FOR SPECIAL CROPS.

(Continued from p. 404.)

VIOLETS.—We have been favoured by Mr. A. L. Wilton with the chemical constituents of Violets grown under glass, which are as follows:—

Chemical composition of 1,000 Violet plants, including roots (cleaned), and of 100,000 Violet blooms as picked for market.

Composition.	In 1,000 Plants and Roots.	In 100,000 Violet Blooms.
Water	lbs. 257	lbs. 114
Organic matter	52	14
Nitrogen	1.5	0.4
Ash	6.9	1.2
Total	317.4	129.6
Composition of the Ash:—	Per cent.	Per cent.
Potash	25.30	51.28
Soda	7.96	4.27
Lime	9.61	8.54
Magnesia	3.63	7.70
Phosphoric acid	5.38	11.11
Sulphuric acid	4.95	7.70
Chlorine	3.95	4.27
Silica and iron	40.12	5.13
Total	100.00	100.00

These facts are particularly interesting, because so far as we know, they are the first complete analyses which have been made of Violet plants and blooms grown under glass.

The first thing thing that calls for attention in the above data is the very large proportion of water both in the Violet plants and flowers, with the consequent small amount of organic matter or dry substance. Thus, the Violet plants consist of about 81 per cent. of water, and 19 per cent. of organic substance; while the blooms consist of about 88 per cent. of water, and only 12 per cent. of organic substance. This assuredly points to the fact that, if the gardener is to ensure vigorous and uninterrupted growth of Violets under glass, he must have a sufficiency of moisture in the soil in immediate proximity to the mass of root-fibrils which branch out from the root-stock.

In the composition of the ash we see how large and important a part potash plays both in plants and flowers. One-quarter of the ash of Violet-plants is composed of potash; and more than one-half (51 per cent.) of the ash of Violet-blooms is composed of the same constituent. Phosphoric acid is also particularly essential for the production of vigorous blooms: this element is found to bear an important relation to some of the metabolic processes in the organised part of Violets.

SOIL FOR VIOLETS.

These plants do well in good clay loam, such as is used for Roses, or in a sandy or gravelly loam. A sandy type of soil, however, should contain abundant fibrous matter from decayed grass-roots or farmyard manure, or should have about one-sixth of good leaf-mould mixed with it at the time of preparing the beds for the young plants. It is probable that independently of the liberal supply of all necessary plant-food constituents in farmyard manure its beneficial effects upon such succulent plants as are Violets, are in a considerable degree due to its influence on the mechanical condition of the soil, rendering it more porous, hence more moisture-retaining, and, therefore, more easily permeable to the mass of fibrous roots.

The amount of manure needed in the compost must be determined by the richness of the original soil. A good, rich clay loam requires one part cow or horse-manure of fair quality, three or four months old, to four parts of soil composted as for Roses. It is best not to add

any bone or other fertiliser. The compost should be thoroughly limed as it is being made up, by adding a liberal sprinkling of quicklime to each layer of soil. The manure should be thoroughly incorporated with the soil by the time the latter is put into the beds. Thorough steam sterilisation of the soil will kill eel-worms, root-rot fungi, spores of *Botrytis*, and numerous other parasites and pests that trouble the Violet grower. Lighter types of soil will take one part manure to three parts of soil, otherwise they may be treated the same as above-mentioned. The greatest danger in Violet growing is in getting the soil too rich, and thus encouraging leaf instead of bloom production.

LATER FEEDING.

We have seen from the foregoing chemical analysis that the amount of nitrogen, phosphates, and even of potash removed from the soil by a crop of Violets is comparatively small, and if well composted soil and farmyard manure are used no further feeding is necessary or desirable.

If, however, feeding should become necessary for any reason, it is safest to use manure-water made as recommended for Roses; but it should not be used oftener than once in three weeks, and only during active growth or when active leaf-growth is desired. If there is indication of a lack of phosphoric acid, which will be shown by reddening of the leaves along the veins and a tardy development of flowers, use steamed bone-meal at the rate of 1 lb. to 30 square feet, one application being usually sufficient; or if the soil contains considerable lime, superphosphate can be used at the rate of 10 oz. to 100 square feet, applied either in water (50 gallons) or sprinkled dry between the rows. If there is any doubt about the soil containing sufficient lime, which is an important constituent of both Violet plants and blooms, give the plants a watering with freshly-made lime-water—1 peck freshly-slacked lime to 50 gallons of water for 200 square feet. This should be applied several days previous to the application of the superphosphate. Two or three applications of superphosphate at intervals of two or three weeks should be sufficient. As stated above, the greatest danger in Violet growing is over-feeding. If the soil should be found too rich, treat as recommended for over-feeding of Roses. J. J. Willis, Harpenden.

(To be continued.)

LAW NOTES.

ASSESSMENT APPEAL.

An important point in assessment was involved in an appeal made at the Cheshire Quarter Sessions at Knutsford, on Wednesday, June 29 and following day, by Joseph Hargate Clibran, nurseryman, of Hale, against the assessment by the Bucklow Board of Guardians of certain property of his in the parish of Hale.

In his opening statement Mr. Trevor Lloyd said the respondents were the Assessment Committee of the Bucklow Union, and the appeal was against the poor rate assessment. The dispute now concerned two assessments—of a packing shed and nursery land. The shed was put down at a gross rental of £100 and rateable value of £75, and nursery land at £105 and £94 respectively. The appellant contended that the assessment was made on an erroneous basis. According to Act of Parliament it should be rated as agricultural land, for under a certain section, which he read, agricultural land was defined as arable, meadow, or pasture land, allotments, &c., and it was stated that land kept as a park or pleasure ground did not come under the term. He therefore submitted it was clear that nursery land came under the head of agricultural land. One shed concerned was a flimsy

structure, and was used for packing purposes, only a tenth of the whole building was used as offices, the building being solely used for the business of a nursery. He submitted such a building came under the same category as a hayshed or farm-building, and that there were further deductions to be made, as farm-buildings were as a rule built substantially, and had longer lives. The building concerned had a life of fifteen to twenty years, and the renewal fund must be deducted to get at the rateable value. Five per cent. was about the amount a landlord would expect to get on his outlay in erecting such a building, and, deducting the renewal and repairs, the figures were brought down to about £40. The appellant was content to have the property rated on the same basis as the highest rated farm in the district. The respondents submitted that more profit was made with the land being used for the purposes of a nursery, and that therefore it must be rated higher, but he held that that was not the proper way to look at the matter. They should consider the value of the land and what a hypothetical tenant would give. Mr. Clibran rented some land from the Hale District Council, and he held that the assessment of the land concerned was much higher than in the other case. Mr. Lloyd also intimated that there was some dispute as to measurements of the land.

The appellant gave evidence describing the property.

Mr. Marsham asked if "this wretched, flimsy structure" was not the largest in the kingdom devoted to such a purpose, and the appellant smilingly acknowledged that it was.

Replying to Mr. Marsham, the appellant said that in the building there were seventeen offices, and that he had from twenty to forty clerks, the number varying. There was a tramway in the shed, and the building was so equipped that work could be done as expeditiously as possible.

Mr. Clibran was cross-examined at great length by Mr. Marsham, after which Benjamin Slade, estate agent, valued the holding at £85 per year, gross, including the house, and £76 10s. would be the rateable value. Separating the house from the land, he allowed £20 for the house, and this would leave £65 gross. Allowing for the usual 10 per cent. off, which was the amount allowed in this district, the rateable value of the holding was brought to £58 10s.

Mr. Clibran was recalled, and stated that the rent paid by him at Hale was £194 6s. for 68 acres.

For the defendant authority Mr. Marsham said that Mr. Clibran and his father had carried on a very extensive business as nurserymen, and had their headquarters at Altrincham for a considerable time. They removed their headquarters to Hale, and took their large staff with them, and had to make adequate accommodation in offices. They had taken half an acre of land and covered that with a building which was not a mere shed, but was in point of fact a more or less permanent building with offices on one side and a potting place on the other.

Mr. Marsham then proceeded to read from Mr. Clibran's catalogue as to what the appellant stated there, when Mr. Lloyd observed that this was a trade puff. Mr. Marsham objected to this, and said it could not puff the length or breadth or height of the building. The adjectives used, such as "flimsy," were advocates' puffs. The Assessment Committee had endeavoured to look at this matter in a serious light. They knew what was right between one ratepayer and another. First of all Mr. Clibran gave the usual notice of objection to the Assessment Committee, and upon that being brought before them they thought the best course to take was to call in some independent valuer and take his opinion. They invited applications from half a dozen people,

and selected Mr. Cross. Mr. Cross made his measurements and put down a price which he thought to be reasonable. The proper rent for the office would be £150 per year. The Assessment Committee met Mr. Clibran, and the matter was talked over in a friendly manner. Then they reduced the amount until they reached the figure of £70, and then they said, "We cannot go any further, and if he objects he must appeal." Was it reasonable to suggest that a net rent of £70 per year was too much for a building of this kind? That was what was being objected to, and he submitted that it was a very reasonable and very low net rent, and that the further deductions had been altogether exaggerated for the purpose of this appeal.

There were other nurserymen in the district, continued Mr. Marsham, and every one of them is rated at more than the one against which this appeal was brought. The land in question was valuable accommodation land, and it was on the main road, and on three sides out of four there were roads.

Isaac Bush, overseer for Hale, and a nurseryman, gave further evidence; and then William Edward Cross, of the firm of Cross & Son, surveyors, of Manchester, said he had made special and careful inspections of the shed and land. The situation was a very convenient one. He valued the land at £150 per year, and considered the building would last for forty years.

Mr. Lloyd remarked that his learned friend seemed to take it for granted that the land should be rented as nursery land. This was the whole issue. The land must be taken as agricultural land, he submitted, and must be taken the same as the land around it, irrespective of what was grown upon it. It was quite clear that they were rating the crops. Mr. Cross had put it at £4 per acre, and rated it as nursery land, and he (Mr. Lloyd) submitted that the Act said nursery land was included in agricultural land. They were over-rated to a very great extent.

The Bench then retired, and after an absence of about fifteen minutes returned.

The Chairman stated that in respect to the land it might be taken that the legal point of view was the one he expressed previously, that they must take the land as it was. On that footing the Bench confirmed the rate as far as the rate was concerned—viz., that it would stand at £105 gross and £94 rateable value, subject to any variation in the $1\frac{1}{2}$ acre mentioned previously. With respect to the packing-shed and so-called buildings they had come to the conclusion that the rate was too high, and that it must be reduced from £100 gross to £90, and from £70 rateable value to £55. In respect to the costs they should direct each party to pay his own. *Condensed from the "Altrincham Advertiser," July 1.*

THE ROSARY.

ROSE PHILIBERT BOUTIGNY.

A HYBRID Tea of good size and form and rich carmine-crimson colour. It was raised at Rouen by M. Boutigny as the result of a cross between Reine Marie Henriette and Victor Hugo. It is stated to be of robust habit and a continuous bloomer. It is figured in the *Journal des Roses* for May.

PLANT PORTRAITS.

RHODOSPHERA RHODANTHEMA (Anacardiaceae), *Maiden Forest Flora N. S. Wales*, t. 32.

IRIS PALLIDA, with yellow-variegated leaves, *Revue de l'Horticulture Belge*, July.

FIGUS DIVERSIFOLIA, shown in the fruiting condition, *Revue de l'Horticulture Belge*, July.

VEGETABLES.

POTATO TRIALS AT READING.

MESSRS. SUTTON & SONS are conducting this year, in their seed grounds at Reading, trials in relation to Potatoes of an unusual character and of great interest. Their object is to determine three things. First, the effect of soils and situations on the constitution or growth of varieties; second, the effect on growth of diverse methods of storing during the winter of seed tubers; and third, the results of shoot or cutting propagation now so largely practised to increase certain varieties now being put into commerce. These trials all differ materially from those that seedsmen ordinarily conduct, as they are usually made to test the relative productiveness of varieties, the quality or the correctness of various stocks.

In relation to the first test, that of the effect of soils and situations on growth, some seven or eight well-known and popular varieties are utilised. Their names can be given after the lifting takes place and tuber produce is seen in the autumn. In each case there are planted sets from southern-grown seed, tubers from Lincolnshire and from Scotland. The results are remarkable, as in each case growth on the southern-grown sets is late, dwarf, and weak; indeed is exactly characteristic of so many breadths of Potatoes seen in diverse directions grown from home-saved seed-tubers. Both the Lincoln and the Scotch tubers give quite strong, robust tops, really as robust as Potato-tops well can be, although the Scotch-grown tubers give, of these, the most even robust growth. The results, so far as haulm-growth is concerned, are astonishingly in favour of Lincoln or Northern seed; and it is no wonder that, having found similar results in previous years without specially testing to that end, the firm is getting its stocks grown in Scotland.

In the second case, the test applies to methods of wintering the seed tubers, and there are numerous varieties used for the purpose. Certain sets of these varieties were set up in shallow boxes last autumn, and wintered in the light and in a cool place, with the natural result that they sprouted in due course strongly, and so remained in robust form till planted. Then certain similar sets, selected from tubers that had been kept in pits in the too common way in the winter, and unsprouted, were planted in alternate rows. The result is, that the plants from the first-named sets are doubly strong, and show conclusively that pit storing of tubers greatly conduces to weakness and deterioration.

In the third trial one variety of Potato only was used, and from tubers started into growth in gentle warmth; in due course the first shoots were taken off and rooted singly in pots, as cuttings are; then the second batch of shoots, and finally the third, were removed and treated in the same way. These batches were kept separate, and were also planted outdoors separately. Still further, the tubers making a fourth break of shoots were also planted. The results, as seen on June 24, were that the second set of shoots was rather stronger and certainly more forward than were those of the first batch, whilst the third was distinctly weaker than either. The planted tubers give quite weak growth, as might well have been expected. The object of this trial (and it is a considerable one) is to see how far propagation by cuttings conduces to weakness or otherwise, and also whether or not second and third-shoot growths give as good results as the first shoots do. A. D.

SOCIETIES.

NEWMARKET HORTICULTURAL.

JULY 7.—A successful show was held on the above date. The judges were — for plants, flowers, and groups, Mr. W. Cox, head gardener at Cheveley Park, and Mr. R. Davidson, head gardener to Earl Cadogan, at Culford Hall; for vegetables, Mr. W. Hooper, head gardener to Mrs. Robinson, Dullingham House, and Mr. A. Ranson, head gardener to Mr. P. P. Gilpin, Clarehaven; for honey, bread, and cooked Potatoes, Mr. D. Game; and for allotments, Mr. H. Lydiatt, head gardener to Sir Daniel Cooper, Bart., Warren Tower, and Mr. G. Aslett, head gardener at Soham House. The principal prizes were taken by Sir Daniel Cooper, Bart., Sir James Miller, Bart., Mr. H. Bullmann, Mr. T. Williams, Mr. Percy Heaton, Mr. T. Jennings.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JULY 11.—The quarterly meeting was held on the above date, Mr. Curtis in the chair. Three new members were elected, making a total of sixty-five this year up to the present time. Five member were reported on the Sick Fund. The amount of sick pay for the month was £20.

GLOUCESTERSHIRE ROSE.

JULY 12.—The sixteenth annual exhibition of Roses, in connection with the Gloucestershire Rose Society, was held in ideal summer weather at Gloucester on the above date. Unfortunately the hot weather experienced during the past week had materially affected exhibition Roses, and several well-known nurserymen who had entered for the show had to withdraw at the last moment, the best blooms having been spoilt by the continued drought and scorching sun.

There was only one entry (instead of six promised) in the nurserymen's class for seventy-two varieties, the sole exhibitors being Messrs. ALEX. DICKSON & SONS, Newtownards, Co. Down. The same well-known Rose-growers were awarded 1st prize for twenty-four varieties, twelve varieties of Teas (three of each), twelve single trusses of any one dark Rose (Horace Vernet), and twelve single trusses of any light Rose (Dean Hole). Messrs. JEFFERIES & SON, Cirencester, won a 1st prize for thirty-six varieties, John MATTOCK, of Oxford, a 1st for eighteen varieties, and two other first prizes for six bunches of Moss Roses, and twelve bunches of garden Roses. Mr. Henry Drew, of Longworth, Berks, won a similar prize for twelve varieties, Teas or Noisettes.

Mr. CONWAY JONES, of Hucclecote, Gloucester, confined his entries to the open amateur classes, in which he was very successful. Among his successes he secured the Society's silver medal for the best Tea, with a superb bloom of White Maman Cochet, Mr. FOLEY-HOBBS, of Worcester, carrying off the Society's silver medal for the best hybrid Tea, with a grand specimen of Mildred Grant.

In the city of Gloucester amateur classes the Corporation prize for twelve varieties, and that offered by the City High Sheriff for six Teas (both pieces of plate) were awarded to Mr. J. H. CROXFORD. The silver medal awarded to Gloucestershire cottagers for twelve varieties was won by Mr. J. MIDDLECOTE, of Matson, near Gloucester.

SCOTTISH PANSY AND VIOLA.

JULY 13.—The second monthly meeting was held in the Religious Institution Rooms, Buchanan Street, Glasgow, on the above date, for the purpose of awarding certificates to such Pansies and Violas as might be deemed worthy. The following awards were made:—

Fancy Pansies. First-class Certificate to Mary Philips (KAY). Certificates of Merit to Provost Thomson (KAY), Mrs. Campbell, Jeanie Carswell, Nellie Curson, Mrs. W. Sinclair, and Mary B. Wallace (all except the first and second from Messrs. DOBBIE & CO.).

Show Pansies.—Mrs. R. Smith, white ground; Katie, yellow self; and A. Paterson, white self (all from Messrs. DOBBIE & CO.).

Violas.—Certificates of Merit to Lady Grant (FRATER), J. H. Watson (KAY), Effie (DOBBIE & CO.), and R. Mackellar (DOBBIE & CO.). Also Certificates of Merit to new Lobelia Blue Jacket (ATCHISON BROS.). Next meeting August 10.

THE NORTH PECKHAM AMATEUR CHRYSANTHEMUM.

The annual outing of the members and friends, including ladies, was made to Gatten Park Gardens, the residence of JEREMIAH COLMAN, Esq., where Mr. Bound showed the party through the Orchid-houses and other parts of the garden. A move was made subsequently to the Chrysanthemum nurseries of Messrs. W. WELLS & CO., of Earlswood, the large collection of Chrysanthemums there causing much surprise.

DEVON AND EXETER GARDENERS' SUMMER OUTING.

THE thirteenth annual outing took place on the 13th inst., when the members took train for Launceston, the ancient capital of the county of Cornwall. On arrival there the party first inspected the very beautiful granite church of the sixteenth century, which is noted for the richness of its carving inside and out, the outside reminding one of the florid style of Roslin Abbey in the North. The visitors then proceeded to the ruined Castle of Launceston, one of the landmarks of the district, where a professional friend and surveyor described its peculiarities and much of its bygone history.

After lunch, brakes and char-à-bancs conveyed the party by the hilly and precipitous roads leading from the town, which hangs on a steep hillside, to Lifton Park, the seat of Mr. Frank Bradshaw, whose gardener, Mr. Pugh, conducted his brother gardeners over the gardens. In passing, some very fine specimens of Begonia "President Carnot" were noted with a wealth of flowers.

The next halt was at Werrington Park, the seat of Mr. J. C. Williams. That is an extensive establishment, and everything from beginning to end was in first-rate order. Houses full of Calanthes, Cyripediums, Cologynnes, frames of Disas, a cabinet of Todea superba, and splendidly-cropped vineries of Muscats, Gros Colmar, Lady Downe's Seedling, Black Hamburgh, and other popular Grapes. Out-of-door fruit was abundant and fine in quality. In the large conservatory, which is paved in mosaic and lighted by electricity generated on the estate, were banks of Gloxinias, a number of well-grown Fuchsias and Begonias, also huge masses of heavily-flowered Streptosolen Jamesoni. The well-kept appearance at every turn in this establishment was a pleasing and notable feature of the place, and reflected the utmost credit on Mr. Murtou's good management.

LOUGHBOROUGH GARDENERS' MUTUAL IMPROVEMENT.

JULY 13.—The members and friends of this Association had their annual outing on the above date. Three special saloon carriages conveyed the party to Burton-on-Trent. By special permission the celebrated Bass's Brewery and Steam Cooperage were visited before luncheon. The party proceeded afterwards by brakes to Byrkley Lodge. The matchless houses of Muscat Grapes were much admired, and the general condition of the gardens was excellent.

The party next proceeded to Rangemore, and was conducted by Mr. Bennett through the gardens and grounds. There is much to admire at Rangemore: every department bears the mark of good culture. The Souvenir de la Malmaison and Tree Carnations are of the very best. Figs appear a specialty. Peaches, Grapes, and orchard-house trees are excellent. The party passed through the pleasure grounds, and noted the new addition of 50 acres which is now being laid out. The lower rooms of the mansion were inspected and the works of art appreciated. The day was one of very great enjoyment and interest.

PORTSMOUTH HORTICULTURAL.

JULY 14, 15.—The annual show was held in the Pavilion on Southsea Pier. The display of Roses was but a moderate one. The leading class for forty-eight distinct varieties was won by Mr. G. H. Kent, gr. to Mrs. E. CROFT MURRAY, Ryde, Isle of Wight, who was the only exhibitor: he staged neat, well-coloured flowers. For twelve dark-coloured H.P. flowers in four varieties, and in other classes, Mr. KENT again won 1st place.

In a local class for twelve flowers of any section, Mr. G. H. Hoare, gr. to Dr. TULLIS, Southsea, was 1st; Mr. W. TRIGGS, 38, North End Avenue, Portsmouth, 2nd.

Garden Roses in eighteen varieties made a great display, so well were they staged by Mr. G. Ellwood, gr. to W. H. MYERS, Esq., M.P., Swanmore House, Bishop's Waltham.

Hardy flowers in twelve bunches distinct were excellent, Mr. KENT winning the 1st prize.

MANCHESTER ROSE SHOW.

JULY 16.—"Manchester weather" did not prevail upon the occasion of this Show, for it was perfect from every point of view. As a show there have been better ones at Manchester, but this may be accounted for by the prevailing warm and dry weather which prevented several good Southern Rose-growers from putting in an appearance. The quality of the Roses shown was good.

The space devoted to the show was the Grand Avenue, recognised by all to be a most delightful and cool spot for a Rose Show, the greenery hanging from the roof providing a natural and beautiful shade, while the large Palms, &c., with which the sides of the building are furnished added considerably to the effect of the exhibits. It is quite evident that Man-

chester will shortly have to hold a show of Sweet Peas, as year by year the number of exhibits from trade and private growers increase.

Fine exhibits came from Messrs. Henry Eckford & Sons, Wem, Salop (Sweet Peas); Mr. H. Goolden, of Moberley, Cheshire (Sweet Peas); and Messrs. Dickson & Robinson, of Manchester (who showed a collection of English Iris, in addition to herbaceous flowers, and were awarded a Silver Medal); Messrs. Gibson & Co., Bedale, Yorks (herbaceous cut flowers, a Gold Medal); and Messrs. Dicksons, Ltd., Chester (flowering plants and Roses, Silver Medal).

The prize-list included the following winners for Roses:—Sixty distinct single trusses (nurserymen): 1st, Messrs. Alex. Dickson & Sons, Co. Down; 2nd, Messrs. Robert Harkness & Co., Hitchin; 3rd, King's Acre Nurseries, Hereford. Thirty-six distinct single trusses (nurserymen): 1st, Messrs. Alex. Dickson & Sons; 2nd, Mr. Geo. Prince, Berkshire; 3rd, Mr. Henry Drew, Berks. Twenty-four Teas or Noisettes (distinct), single trusses (nurserymen): 1st, Mr. Geo. Prince; 2nd, Mr. Henry Drew; 3rd, Mr. John Mattock, Oxford. For twenty-four single trusses (amateurs): 1st, Rev. J. H. Pemberton, Essex; 2nd, Mr. Richard Park, Bedale; 3rd, Mr. E. B. Lindsell, Hitchin. Twelve distinct ditto: 1st, Mr. W. Boyes, Derby; 2nd, Mr. E. B. Lindsell. Twelve Teas or Noisettes: 1st, Mr. Foley Hobbs; 2nd, Mr. Richard Park.

NATIONAL SWEET PEA SOCIETY.

JULY 20, 21.—The show held at the Crystal Palace on the above dates was well worthy of the efforts of the Committee, being one of the best displays yet seen. New varieties were not numerous, but those of last year's introduction were seen in splendid condition.

NEW VARIETIES.

Henry Eckford, which gained the Society's Silver Medal (offered for the best new variety), is of a peculiarly pleasing shade of clear orange colour, shading off to salmon. It has a well-rounded standard and good wings, and reminds one of *Gorgeous*, but is better in all points. From Messrs. H. ECKFORD & SONS.

Lora Breamore (BREAMORE).—Cream-coloured with a bronzy shade and slight marking of pink; broad standard and large wings (First-class Certificate).

John Ingram.—Somewhat resembles the variety *Lord Rosebery*, but is of a brighter shade of colour; flowers of large size, with a well-rounded standard, and most of the flower-stems carrying four good blooms. From Mr. Silas Cole, gr. to Earl SPENCER (First-class Certificate).

Douglas Breamore.—Large, well-formed flowers of rosy-red colour flaked and striped with greyish-white. From C. W. BREAMORE, Winchester (Highly Commended).

Lady Aberdare, a fine, bright rosy-pink flower, from C. W. BREAMORE (Highly Commended).

Several others were submitted to the Committee, but failed to gain any recognition. Of these *Helen Lewis*, from Mr. WATSON, of Ham Common, was a promising variety of an orange shade of colour, with four flowers on a stem; but the sun had taken the colour out of some flowers.

Gladys Unwin, which has previously been exhibited, was again submitted, but failed to obtain favour. It is certainly a very good variety, but rather too much like *Countess of Spencer*.

In various exhibits the variety *Countess Spencer* showed some variation in colour, but was good wherever seen.

COMPETITIVE CLASSES.

In the classes for separate colours, two bunches of each, there was a large competition. In that for *white varieties* Dorothy Eckford was a long way ahead of all others, the 1st, 2nd, and 3rd prizes all going to that variety. In *blush varieties* the 1st prize went to *Sensation* and *Duchess of Sutherland*; 2nd to *Modesty* and *Countess of Aberdeen*.

For *Crimsons*, King Edward and Scarlet Gem took the 1st and 2nd prizes, but for the 3rd Salopian and King Edward were selected.

Coccinea obtained 1st, 2nd, and 3rd prizes in the class for *Cerise* flowers.

Rose and Carmine.—Lord Rosebery and Prince of Wales took the 1st prize, and Lord Kenyon appeared in the 2nd prize exhibit.

Pink.—The 1st prize was won by the varieties Mrs. Knight Smith and Janet Scott, two new varieties; 2nd prize by *Lovely* and *Prima Donna*; 3rd by *Prima Donna* and *Countess Spencer*.

Orange shades.—The varieties Miss Willmott and Lady Mary Currie won the 1st and 2nd prizes, and *Gorgeous* appeared in the 3rd prize exhibit.

Yellow and Buff.—The Hon. Mrs. E. Kenyon, Dora Breamore, and Queen Victoria were in the prize-winning exhibits.

Lavender.—Lady Grizel Hamilton and Countess Radnor took honours.

Blues.—Countess Cadogan, Navy Blue, and Captain of the Blues were the best.

Mauve.—Dorothy Tennant, Fascination, and Admirable obtained the prizes, but in other exhibits Princess May was one of the best of this shade.

Violet and Purple shades.—Duke of Westminster and Mrs. W. Wright were the best.

Maroons.—Othello and Black Knight were in all the best exhibits.

Magenta shades.—George Gordon and Captivity were best.

Picotee edged.—Lottie Eckford and Dainty were the varieties in the 1st, 2nd, and 3rd prize exhibits.

Striped and Flaked Reds and Rose.—Jessie Cuthbertson and Mrs. J. Chamberlain took 1st prize, but the variety America was shown in the 2nd prize exhibit, and Aurora in the 3rd prize exhibit.

Purple and Blue Flaked and Striped. Princess of Wales and Senator secured the prizes.

Bicolors.—Prince Edward of York, Jeannie Gordon, and Triumph won prizes.

Fancies.—Gracie Greenwood and Lottie Hutchings took the 1st prizes, Duchess of Westminster and Mrs. Fitzgerald were shown in the 3rd prize exhibit. In all the above classes there was much competition.

COLLECTIONS.

In the special class for nineteen bunches there were eight competitors, the 1st prize going to A. G. HAYMAN, Hapsford House, Frome (gr., Mr. Packland); 2nd, to Mr. S. Cole, gr. to Earl SPENCER, Althorp Park, Northampton; and the 3rd, to Mrs. A. TIGWELL, Harrow View, Southall.

In the "Classification" class for nineteen varieties there were four exhibitors, Messrs. I. HOUSE & SON, Westbury-on-Trym, 1st; Mr. C. W. BREADMORE, Winchester, 2nd; and Mrs. FRANK BREWER, Beckley, Sussex, 3rd.

In the class for thirty-six distinct varieties there were five competitors, and the one who would have taken the 1st prize was disqualified through the varieties not being considered all distinct. Messrs. I. HOUSE & SON took 1st; Mr. C. W. BREADMORE, 2nd; and Mrs. T. ROTHERA, Burton Joyce, Notts, 3rd prize respectively.

In the class for twenty-four bunches, distinct, there were only two entries, Mr. BREADMORE taking 1st, and Messrs. HOUSE & SON 2nd.

In the class for twelve varieties the same competitors came in, but honours were reversed.

In the classes not open to the trade there was a larger competition, and the exhibits were of good quality. The sorts mentioned in the list for separate colours were all prominent in these classes.

There was a good competition in the classes for table decorations, vases, and epergnes, and many of these were very effective.

NON-COMPETITIVE EXHIBITS.

Mr. BAKER, of Wolverhampton, made a fine display, and was awarded a Gold Medal, as well as the Crystal Palace Company's Medal.

Mr. H. J. JONES, Ryecroft Nursery, Lewisham, showed all the best varieties, well displayed, having about 100 large bunches, and in the foreground some light arrangements in stands (a Gold Medal).

Messrs. C. STARK & SON, Great Ryburgh, had a collection of about fifty sorts, including some of their own raising (Silver Medal).

Messrs. H. ECKFORD & SONS put up a large collection in their usual good form (Silver Medal).

Mr. C. W. BREADMORE, of Winchester, staged about 125 varieties in good bunches, and was awarded a Silver-gilt Medal.

Messrs. J. LAING & SONS, of Forest Hill, staged about sixty varieties (Silver Medal).

Messrs. CANNELL & SONS, of Swanley, had a good collection of Sweet Peas, also other annuals and hardy flowers (Large Silver Medal).

Messrs. T. S. WARE, Ltd., Feltham, furnished a long table with Sweet Peas and foliage (Silver-gilt Medal).

HOBBIES, Ltd., Dereham, exhibited Sweet Peas, Roses, and Carnations, making a good display (Gold Medal, also Medal of the Crystal Palace Company).

Mr. G. Crabbe, gr. to T. LLOYD DAVIS, Esq., of Park House, Addlestone, staged a collection of about forty varieties of Sweet Peas, the flowers being very fresh and bright.

Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood, were awarded a Large Silver Medal for a fine display of Gloxinias.

SCHEDULES RECEIVED.

COTTINGHAM AND DISTRICT SOCIETY'S Annual Flower and Poultry Show, to be held in the Grange Park, on Thursday, August 18, 1904. Secretary, Mr. F. W. Thompson, 50, Hallgate, Cotingham, E. Yorks.

STOCKPORT AND DISTRICT SOCIETY'S Chrysanthemum, Flower and Fruit Show, to be held on Friday and Saturday, November 11 and 12, 1904, in the Volunteer Armoury, Stockport.

DULWICH CHRYSANTHEMUM SOCIETY'S annual exhibition on Tuesday and Wednesday, November 8 and 9, 1904, to be held at the Baths, East Dulwich (Green). Hon. Sec., Mr. C. A. YOUNG, 319, Crystal Palace Road, East Dulwich.

CHIPPENHAM AND DISTRICT HORTICULTURAL SOCIETY'S Exhibition on Wednesday, August 10, 1904, in the grounds of Hardenhuish Park.

MIDLAND CARNATION AND PICOTEE SOCIETY'S Exhibition, to be held in the Botanical Gardens, Edghaston, on Thursday and Friday, August 4 and 5.

MARKETS.

COVENT GARDEN, July 20.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, per doz....	4	0-10	Lilium lancifolium ...	1	6-2 6
Alströméria, doz.	4	0-6	Lily of the Valley, p. doz. bunches	6	0-12
Arunis, per doz.	1	0-3	Mallow, per doz.	2	0-3
Bouvardias, doz.	4	0-6	Marguerites, yellow, dozen bunches	1	0-2
Carnations, Malmaison, 12 blms.	0	8-3	Marguerites, white, dozen bunches	2	0-4
— per bunch ...	0	4-1	Orchids, various, per dozen ...	2	0-8
— doz. bunches	3	0-12	Pelargoniums, zonal, dozen bunches	3	0-6
Coreopsis, p. doz.	0	9-1	— white, dozen bunches	4	0-6
Cornflower, per dozen bunches	0	6-1	— double scarlet, per doz. bun.	2	0-3
Dahlias, per doz.	0	4-6	Pinks, dozen bunches	1	0-3
Delphiniums, per dozen bunches	2	0-3	Poppies, Iceland, dozen bunches	0	6-3
Ferns, Asparagus, per bunch ...	0	6-1	Pyrethrum, per doz. bunches	2	0-3
French, 12 bun.	0	3-4	Roses, Mermet, per bunch ...	1	0-2
— Maidenhair, doz. bunches	6	0-8	— Moss, dozen	4	0-6
Gaillardias, doz.	0	8-1	— white, bunch	1	0-2
Gardenias, box ...	1	0-2	— pink bunch	1	0-3
Gypsophylla, doz. bunches	2	0-4	— red, bunch	0	4-1
Gladiolus, Blushing Bride, per doz. bunches	1	0-2	— Safran, beh. 10-2-10		
— white, 12 bun.	2	0-4	Scabiosa, dozen bunches	4	0-6
— various, doz. bunches	1	6-6	Smilax, 12 bunch.	1	6-3
— red, per doz. spikes...	3	0-—	Stephanotis ...	1	0-2
Honesty, bunch	1	0-—	Stocks, per doz.	2	0-4
Iris, doz. bun.	3	0-6	Sweet Peas, per dozen bunches	1	0-1
Ixia, per doz. bun.	2	0-3	Tuberose on stem, bunch	0	9-1
— (French), bun.	1	6-2	— short, p. doz.	0	3-0
Lilium auratum per bunch ...	1	6-3	Violas, doz. bun.	0	9-1
— candidum, p. doz. bunches	8	0-12			
— Harrisii, per bunch	1	0-2			

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Lycopodiums, per dozen	3	0-4
Arbor Vitæ, per dozen	9	0-18	Marguerites, per dozen	2	0-4
Aspidistras, doz.	18	0-36	— double yellow	2	0-4
Aspidistras, doz.	4	0-8	— single yellow	2	0-4
Calceolarias, per dozen	3	0-4	— Etoile d'Or, per dozen	6	0-10
Campanulas, ...	4	0-10	Mignonette, per doz.	3	0-4
Canas ...	4	0-6	Musk, per dozen	2	0-4
Coccol ...	12	0-18	Palms, var., each	3	0-20
Crassula ...	12	0-12	Pelargoniums, per dozen	4	0-10
Crotons, per doz.	12	0-24	— double scarlet, per doz.	4	0-6
Cyperus, per doz.	3	0-4	— pink ...	2	0-6
Dracænas, variety, dozen	6	0-18	— Jacoby ...	3	0-4
Ericas, per dozen	8	0-12	— white ...	2	0-6
Eucalyptus, vars., per dozen	4	0-10	Petunias, in boxes	1	0-—
Ferns in var., per dozen	4	0-30	Pteris tremula, p. dozen	4	0-8
Ficus elastica, per dozen	9	0-24	Rhodanthe ...	6	0-8
Fuchsias, per doz.	2	0-4	Rose trees, per dozen	4	0-10
Heliotropes, per doz.	2	0-4	Saxifrage, per dozen	8	0-10
Hydrangeas, doz.	16	0-12	Stocks, per dozen	3	0-6
Lilium Harrisii, per dozen	4	0-8	Tropeolum, doz.	3	0-4
— rubrum, doz.	6	0-9	Verbena, per doz.	6	0-10
— alba, per doz.	6	0-9			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, Australian, in cases	2	0-8	Grapes, Gros Colmar, per lb.	1	0-1
— English, sieve	2	0-2	— Alicante, lb.	0	10-3
Bananas, bunch	5	0-10	Lemons, per case	14	6-30
— loose, dozen	1	0-1	Melons, each	0	9-1
Figs, per doz.	2	0-6	Nectarines, A. doz.	12	0-18
Gooseberries, per sieve	1	0-1	— B, per doz.	2	0-8
Grapes, Hambro' A, per lb.	2	0-3	Oranges, per case	12	6-—
— B, per lb.	0	6-1	Peaches, A, per doz.	12	0-18
— Gros Maroc, lb.	1	0-1	— B ...	3	0-8
— Muscat A, lb.	3	0-4	Pines, each	3	0-5
— B, per lb.	1	0-1	Strawberries, per doz. punnets	3	0-9

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen	2	0-—	Mushrooms (house), per lb.	1	0-1
Beans, Broad, per bushel	1	3-1	Onions, green, doz. bunches	1	6-2
— dwarf, per lb.	0	3-—	— per bag	5	6-7
Beetroot, bushel	4	0-5	Parsley, doz. bun.	1	6-2
Cabbages, per tally	3	0-6	— sieve	1	0-—
Carrots, per doz. bunches	0	6-1	Peas, per bushel	2	0-3
Cauliflowers, per dozen	2	0-3	Potatoes, per ton	80	0-120
Celery, per dozen bunches	18	0-—	Radishes, per dozen bunches	0	8-9
Cress, doz. pun.	0	9-—	Salad, small, punnets, per doz.	0	9-—
Cucumbers, doz.	1	9-3	Shallots, lb.	0	2-3
Endive, per doz.	2	0-3	Spinach, p. strike	2	0-2
Garlic, per lb.	0	2-3	Tomatoes, Chantrelle Islands, per lb.	0	3-0
Horseradish, foreign, p. bunch	1	0-—	— English, per dozen	3	6-4
Leeks, per dozen bunches	1	0-1	Turnips, new, per doz.	1	6-2
Lettuces, Cabbage, per dozen	0	6-9	Vegetable Marrows, per doz.	1	0-2
— Cos, per score	0	8-1	Watercress, per dozen bunches	0	3-0
Mint, doz.	2	0-2			

REMARKS.—A quantity of very inferior Tasmanian Apples are on the market. Green Walnuts, per bushel, 4s. 6d.; half, 2s. 6d. The Beets named above are new produce; some in bunches, per dozen, 2s. 6d. to 3s. 6d. Cherries, black, 5s. 6d. to 7s.; Amée, 5s. to 6s.; Napoleon, 9s. to 10s. Mangos (Jamaica), per dozen, 9s. to 12s. Vegetable-Marrows are becoming abundant, per bushel, 1s. 6d.; pads, 2s. 6d. Yorkshire Peas, in bags, 3s. to 5s. Many samples of Potatoes are small.

POTATOES.

St. Malo, 5s. 6d.; Home-Grown, 4s. to 6s. per cwt. John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

Trade is falling off considerably, but there is still a good supply of pot plants. The yellow Chrysanthemum segetum is seen in large quantities, and they have to be sold very cheaply. Marguerites fetch very low prices; Campanula isophylla and C. Mayi are now obtainable; Coreopsis, well flowered in pots, are very showy, and there are some good Canas in flower; Crassula coccinea is very bright in colour.

Fuchsias vary much; some plants are still very good, but others are inferior. Of zonal Pelargoniums, the larger portion is of poor quality. In Ivy-leaved Pelargoniums there are some fresh, well-flowered plants of Galilee and Madame Crousse. Mignonette is plentiful and good. There are large quantities of Coleus, but they are unsold, and would not fetch the value of the pots. Liliums are very good. There are still a few plants of summer-flowering Ericas and Boronia elatior. There are Crimson Rambler Roses, well-flowered, bushy plants in 5-inch and 6-inch pots, but there is very little trade for them. Other Roses in pots move very slowly. There are still a good many Ferns in all sizes. The large plants in 8-inch pots find little demand; a good many of the ordinary sorts in 5-inch pots sell, also small plants. Aralia Sieboldi in 5-inch pots sell slowly, at low prices. There is still a little trade for small Palms. One grower who had fine large Kentias and Latanias told me he did not get an enquiry for them. It will be quite unexpected if there is any trade before September, except for very limited quantities.

CUT FLOWERS.

Hardy flowers are still in great abundance, but trade is very dull. Best Carnations, which have sold so well through the season, now remain on hand. The trade for Roses is also falling off. Lilium longiflorum is not quite so abundant, but L. candidum is over plentiful. L. lancifolium, roseum, and album, also L. auratum, are all good. Considering the hot weather, Sweet Peas are very good, and continue over plentiful. Gaillardias are seen in large quantities. Gladioli of the Bride type in several colours, also G. brecheleyensis, English Irises are still good. Stocks and Asters are plentiful, and there are a few Dahlias. Mr. P. Ladds, of Swanley, had some Chrysanthemums about a week ago, Madame Desgranges and the yellow-flowered variety. They were disbudded flowers, and they made from 1s. to 1s. 6d. per bunch of from six to eight blooms. A. H., July 16.

FRUITS AND VEGETABLES.

GLASGOW, July 21.—The following are the averages of the prices during the past week:—Grapes, English, 1s. to 1s. 9d. per lb.; Belgian, 8d. to 1s.; Cherries, 6s. to 8s. per 3½ sieve; Strawberries, Scotch, 3d. to 6d. per lb.; Lemons, 4s. to 6s. per box, and 6s. to 10s. per case; Melons, Valencia, 1s. to 2s. per case; Mushrooms, Scotch, 10d. to 1s. 2d. per lb.; Tomatoes, English, 5d. to 7d. per lb.; do., Guernsey, 4d. to 6d. do.; do., Scotch, 5d. to 8d. do.; do., Spanish, 12s. to 17s. per case; do., French, 3s. to 4s. 6d. per crate; Onions, Valencia, 4s. 6d. to 5s. per case.

LIVERPOOL, July 20.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Potatoes, per cwt., Kidneys, 6s. 9d. to 8s. 6d.; Early Regents, 5s. to 6s. 3d.; Up-to-Date, 3s.; new, 1s. 9d. to 2s. per lb.; Turnips, 6d. to 10d. per dozen bunches; Carrots, 8d. to 10d. do.; Parsley, 6d. to 8d. do.; Lettuce, 6d. to 9d. per dozen; Cucumbers, 1s. 6d. to 2s. 6d. do.; Cauliflowers, 1s. to 2s. do.; Cabbages, 6d. to 1s. do.; Peas, 3s. 6d. to 5s. per hamper. Fruit: Oranges, Valencia, 7s. to 10s. per case; and 9s. to 16s. for better sorts; Melons, Valencia (mostly green), 3s. 6d. to 6s. 6d. per case; do., yellow, 9s. 6d. to 10s. 6d. do.; Tomatoes, English, 4s. to 5s. 6d. per case; do., Spanish, 2s. 6d. to 3s. do.; Apples, Lisbon, 7s. 6d. to 9s. do.; do., Oporto, 3s. 6d. to 7s. do.; Lemons,

Palermo, 4s. 9d. to 8s. do.; do., Naples, 7s. 6d. to 10s. 6d. per box. *St. John's*—Potatoes, 1d. per lb.; Peas, 8d. to 10d. per peck; Cucumbers, 3d. and 6d. each; Gooseberries, 1d. and 2d. per lb.; Cherries, 4d. and 6d. do.; Strawberries, 4d. and 8d. do.; Currants, Black, 6d. do.; do., red, 5d. do.; Peaches, 2d. to 6d. each; Apricots, 1s. per dozen; Grapes, English, 2s. to 3s. per lb.; Pines, foreign, 3s. to 5s. each; Mushrooms, 1s. 6d. per lb. *Birkenhead*—Potatoes, 1s. per peck; do., new, 3d. to 4d. per 5lb.; Cucumbers, 2d. to 4d. each; Currants, Red, 4d. and 6d. per lb.; do., Black, 5d. and 6d. do.; Strawberries, 4d. and 6d. do.; Gooseberries, 1d. to 3d. do.; Peas, 9d. to 1s. per peck; Grapes, English, 2s. to 3s. per lb.; Cherries, 3d. to 6d. do.; Pines, foreign, 2s. 6d. to 4s. 6d. each; Mushrooms, 8d. to 1s. per lb.; Tomatoes, English, 1d. to 7d. do.

ANSWERS TO CORRESPONDENTS.

* * The reports which our Correspondents have kindly sent us upon the condition of the **FRUIT CROPS** will be published in our next issue.

APRICOTS CRACKING: *S. C. M.* If the other trees in the house are in good health, it shows that the mischief is constitutional or peculiar to that one tree. The fruit looks quite healthy, so that we are unable to give any definite answer to your question.

BEGONIA REX: *C. W. A.* Why address the Publisher on such a subject? The plant is suffering from mites, greenfly, thrips, and other insects. The plant, moreover, looks as if the watering had been carelessly done. Try dipping the plant in tobacco-water.

BRITISH GARDENERS' ASSOCIATION: *B. Pearce.* You should write to the Hon. Secretary, Mr. W. Watson, Kew Road, Kew. We believe, however, that you will have to wait until you have had five years' experience before your application for membership will be entertained.

CEDAR: *E. C. M.* We find neither insect nor fungus. Perhaps the tree is showing the effect of the last few years' drought.

CŒLOGYNE-LEAVES SPOTTED: *Dendrobe.* Your specimen seems to be very vigorous, although the leaves are spotted. It is probable that condensed moisture falling on the plant at night may have caused the damage, or it may be that syringing overhead has contributed to the mischief. *Cœlogyne cristata* needs abundance of rain-water at the roots when growing, and should never be allowed to become dry enough to cause the pseudo-bulbs to shrivel, even in the resting season. We advise you to cut all the old damaged leaves off and burn them. Keep the plants moist and shady, and rest them in a cool-house later.

CUCUMBER: *Perplexed.* The spot-disease so often mentioned lately. See specially the *Gardeners' Chronicle*, October 4, 1902, p. 241, and September 5, 1903, p. 184.—*W. E.* The Cucumber and Melon spot is caused by the fungus *Cercospora melonis*, and attacks plants growing under any kind of treatment. But though an attack is not necessarily the result of neglect, there is no doubt that the high temperatures and humid atmosphere employed in the common method of forcing the plants into fruit are of the greatest assistance to the disease, as they tend to its increase.

CUCUMBERS: *G. H.* The plants are not likely to suffer from the bleeding that follows the cutting of fruits.

GREEN PEAS, TO BOTTLE: *C. B.* Shell the Peas, put them into dry, wide-mouthed bottles, and shake them together, so that they may lie in as little space as possible. Cork the bottles closely, and seal the corks. Bury the bottles in the driest part of the garden, and take them up as they are wanted. They ought to keep good for four or five months.

IVY: *T. R.* We find neither fungus nor insect. Have you been syringing or spraying? All you can do is to cut the Ivy close in and burn the clippings.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*M. C. T.* 1, Probably a form of *Campanula rhomboidalis*, but no flowers remained; 2, *Veronica cupressoides* (white variety); 3, send in flower—not recognised from specimen received.—*A. M.* 1 and 2, *Bromus giganteus*; 3, *Bromus sterilis*.—*G. M.* Cut-leaved Alder, *Alnus glutinosa*

variety.—*R. P.* We cannot name the particular Briar. The flower is *Veronica Traversi*.—*K. & B.* The Martagon Lily, *Lilium Martagon*.—*W. C. & Co.* *Combretum coccineum* alias *purpureum*.—*S. & S.* *Salvia Horminum*.—*Veronica.* 1, *Alstroemeria aurantiaca*; 2, *Spiraea Douglasi*; 3, *Lysimachia vulgaris*; 4, *Chelone barbata*; 5, not recognised; 6, *Epilobium lancifolium*; 7, *Campanula Trachelium*; 9, *Eryngium alpinum*; 10, *Lychnis chalconica*; 11, *Lychnis dioica*, double; 13, *Polygonum affine*; 14, *Gualtheria Shallon*; 15, *Escallonia macrantha*. We name double the number we undertake to do. A small contribution to the Gardeners' Orphan Fund would therefore be acceptable.—*Phyto.* 1, *Linaria hepaticifolia*; 2, *Hypericum pulchrum*; 3, *Lapsana communis*.—*E. M. A.* 1, *Smilax aspera*; 2, *Tradescantia virginica*; 3, *Polygonum orientale*; 4, *Phyllostachys* species; 5, *Campanula Trachelium*; 6, *Sidalcea malvaeflora*; 7, *Deutzia crenata*, double.—*G. H. S.* *Bromus giganteus*.—*L. R. R.* 1, *Sagina procumbens*; 2, *Dianthus sinensis*; 3, not recognised; 4, *Prunella vulgaris*; 5, *Sedum album*; 6, *Armeria vulgaris*; 7, *Sedum acre*; 8, *Viola cornuta*; 9, *Centaurea moschata*; 10, *Zephyranthes Atamasco*; 11, *Lilium superbum*; 12, *Lilium Martagon*. You send more than six—the least you can do is to send a small contribution to the Gardeners' Orphan Fund.—*F. W. C. S.* 1, *Lotus Jacobæus*; 2, *Digitalis lutea*; 3, *Dracocephalum Ruyschianum*.—*A. E. R.* 1, *Juniperus nana*; 2, *Retinospora dubia*; 3, *Retinospora ericoides* of gardens; 4, *Sedum reflexum*; 5, *Sedum glaucum*; 6, *Dianthus* sp.—*W. S.* *Valeriana* (or *Centranthus*) *ruber*, the Red Valerian.—*Trafalgar.* *Mesembryanthemum acinaciforme*.—*H. C.*, *Bridgewater.* *Hemanthus puniceus*, a South African *Amaryllid*.—*W. P.* 1, *Adiantum formosum*; 2, *A. Pacotii*; 3, *A. Waltoni diffusum*.—*E. Cosmos.* *Hippeastrum stylosum*, illustrated in the *Botanical Magazine*, t. 2278. The flower you send is abnormal, two of the segments being joined. It will thrive in a warm greenhouse or conservatory.—*W. R.* 1, *Trachelium cœruleum*; 2, *Ceanothus azureus*; 3, *Alstroemeria aurea*.—*R. G. H.* 1, not found; 2, *Vicia hirsuta*; 3, *Sium latifolium*; 4, *Aira cœspitosa*; 5, *Sium angustifolium*; 6, *Ranunculus sceleratus*.—*R. S.* The specimens are so bad that we cannot undertake to name them.—*H. B.* 1, *Centranthus ruber*; 2, *Galega officinalis*; 3, *Echinops Ritro*; 4, *Phygelius capensis*; 5, send when in flower; 6, *Acanthus spinosus*.—*S. H. T.* Why address the Publisher on such matters? 1, *Hedysarum coronarium*; 2, *Campanula pyramidalis*.—*A. B.* We only undertake to name six, you send many more. You should send a small contribution to the Gardeners' Orphan Fund. 1, *Spiraea Ulmaria*; 2, *S. Ulmaria*, double-flowered; 3, *Astrantia europæa*; 4, *Thymus Serpyllum* variety; 5, *Lysimachia nummularia*; 6 and 7, *Lilium umbellatum*; 8, *Dianthus casius*; 9, *Armeria maritima*; 10, *Veronica officinalis*; 11, not recognised.

NARCISSUS SEEDS: *Narcissus.* Not at all unusual. Sow the seeds at once in pans filled with sandy loam, and put them in a cold frame. The young bulbs may be planted in sandy loam in a south border next season, and they will not flower until they are three years or more old.

NECTARINES: *C. C. M.* Your fruits were over-ripe, and had been bruised by pinching or other injury. Send particulars.

NUT-TREES: *G. W.* The system adopted in Kent is to plant a young tree with about 18 inches of clean stem, from which the eyes have been cut out when young. Each tree has about six or eight strong shoots on the top, to form the branches. These should be cut back in the winter to an outside eye, leaving about 1 foot of the previous summer's growth. This will encourage the tree to grow outwards, and thus form the basin-shaped tree as seen in Kent. All growths except the leader can be broken without severing them. This is better than cutting, as it allows the broken part to take some of the sap, and thus prevents a second growth. This broken part, with a portion below the break, can be cut away at the winter

pruning. The knife and saw are very much used, with the view to get the trees into shape, and which never seems to injure them in the least. A much quicker plan is to use hoops, and tie the branches slightly down to them. If suckers grow from the base, a hoe should be used to draw the soil away, so as to break them off at the junction; do not cut them. Following this practice, acres of trees may be seen, each standing in a hole of from 6 to 12 inches deep, and the large roots radiating from the base are exposed. These are very old trees. But you must begin the "benting," as it is termed in Kent, when the trees are quite young. Do not throw the soil back after the bushes are established. *G. B.*

PEACH-TREE: *C. B.* Afford more lime to the soil.

POTATO DISEASE: *G. W.* Seems to be the Potato-rot. Spray the plants with Bordeaux-mixture, and you may save a large proportion of the crop.

ROSES: *Wimble.* To obtain the best results from Roses in pots for flowering in early winter, repot the plants in August, using for a rooting medium a compost of three parts good loam and one part well-rotted manure, together with a little bone-meal and some silver-sand. Remove all flower-buds as soon as they appear, from the time of repotting until about a month before the plants are required to be in flower. Then place the plants in a house having a minimum atmospheric temperature of 45° to 50°, and only prune them sufficiently to remove any weak wood.

SILVER-LEAF DISEASE: *C. D.* There is a certain amount of mystery connected with the origin or cause of this disease; but some cultivators have found that applications of sulphate of iron to the soil have a good effect upon trees showing the symptoms of attack. You might try the effect of this, and, if not satisfactory, then remove the tree.

"SPOT" ON GRAPES: *G. H.* The disease is caused by the fungus *Gloeosporium*. You must not spray with the liver-of-sulphur after the berries have commenced to change colour.

VINES: *E. S.* Weakly-grown Vines; leaves scorched. Are some of the panes of glass defective.

WALNUTS, TO PICKLE: *A. S.* Scald the Walnuts, and use them for pickling before they have a hard shell. This scalding will enable you to rub off the skin easily. Put them into a brine of salt-and-water strong enough to float an egg (about 6 oz. of salt to a quart of water). Let them stand three days, then put them into fresh brine, and let them soak three days longer. Now put them once more into fresh brine and let them soak four days. They are then fit for the jar. Have ready prepared equal parts of black Pepper, Jamaica Pepper, Allspice, and Ginger; a quarter of a pint of Cloves, the same quantity of Mace, and a pint of white Mustard-seed. Beat these ingredients together in a mortar, but do not pound them fine. Put the Walnuts into a jar in layers, and over each layer strew some of the mixed seasoning. Then have ready some vinegar, boiled, with sliced Horseradish and Ginger, and cover the Walnuts with it. When quite cold, cork and bladder the jar. This pickle is much improved by the addition of a little garlic and tarragon, boiled with the vinegar. Quantities must depend on the quantity of Walnuts, and whether they are preferred with much or little flavouring; 2 oz. of ginger, 2 oz. of black pepper, 4 blades of mace, 2 oz. of mustard-seed, 8 cloves stuck into 2 cloves of garlic, is sufficient for half a gallon of vinegar. *E. M.*

COMMUNICATIONS RECEIVED.—*R. W. R.* A reply will be sent later on; in the meantime we acknowledge with many thanks the receipt of 2s. 6d. for the Gardeners' Orphan Fund.—*H. Sun*, New Eltham (many thanks; we will examine them).—*Miss Winter* (photos under consideration; many thanks).—*W. G. S.*—*A. H.*, Jersey (photograph).—*E. Webb & Sons* (photograph).—*M. Bourguignon*—*H. Henkel*.—*Professor Marchi*.—*Mantova* (photograph).—*R. A. R.* (sketch, &c.).—*B. & S.*—*W. H. W.*—*Secretary R.H.S.*—*R. S.*—*T. A. T.*—*T. A.*—*W. Fell & Co.*—*W. H.*—*P. K.*—*Grower*.—*St. Albans*.—*A. S.*, Cheshunt—*Palm*—*R. D.*—*G. P.*—*W. A. C.*—*W. H.*.—*G. H. H.*—*J. G. W.*—*E. M.*—*R. P. B.*—*W. E. L.*

(For Weather see p. x.)



THE

Gardeners' Chronicle

No. 918.—SATURDAY, July 30, 1904.

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showing the ceremony of opening by the King.	

THE CENTENARY OF THE ROYAL HORTICULTURAL SOCIETY.

MANY of our readers will remember the discussion which took place some few years since as to the most appropriate method of celebrating the centenary of the Royal Horticultural Society. At that time the lease of the gardens at Chiswick had still several years to run, and although the conditions for successful gardening in that locality were steadily going from bad to worse, yet many thought it better to remain there for some few years, and to devote the energies of the Society to the erection of a suitable building for the fortnightly meetings of the Society, for the provision of offices and Committee rooms, and for the accommodation of the Lindley Library. Others, though they could not but recognise the necessity for a proper establishment, yet gave precedence to the scheme for forming a new garden. Various sites were examined, reported on, and eventually condemned. Meanwhile the inconvenience and the inadequacy of the existing Drill Hall and of the offices were becoming more and more apparent, and the state of things became in fact almost intolerable. No one who visited the offices and library in Victoria Street during the last few years, or who experienced the unsuitableness and insufficiency of the accommodation provided at

the Drill Hall, could any longer doubt that the provision of a new home for the Society was the most urgent requirement to be fulfilled.

By a most fortunate coincidence the competing claims of those who considered a new



BARON SIR HENRY SCHROEDER, BART.,
To whose generosity the adoption of the Hall
scheme was primarily due.

garden as the first necessity, and of those who held that a proper "home" was the most essential consideration, have been adjusted in a most satisfactory manner.

Thanks especially to Baron Sir HENRY SCHROEDER in the first instance, and to the

new Roman Catholic cathedral, midway between Victoria and St. James's Park stations, and only a few minutes' walk from Victoria Street. That Hall is now completed, and was officially opened on Friday the 22nd inst., by H.M. the KING, who was accompanied by H.M. the QUEEN and by the Princess VICTORIA. The proceedings on that occasion are given in detail in another column. Suffice it here to say that they were of the most satisfactory character. The spaciousness and excellent lighting of the Hall were the subjects of universal approval. Nor could the arrangements made by the Council and their hard-worked Secretary fail to elicit the heartiest commendation. Everything worked smoothly. A certain stately simplicity and a unity and directness of purpose seemed to pervade the whole of the arrangements, personal or material. The most cordial thanks and the warmest congratulations are due to all those who have been instrumental in carrying out this scheme. The Hall only is sufficiently complete for use at present, and its facilities were further tested on Tuesday last, when not only was there held one of the ordinary fortnightly meetings, but the Carnation Society also held its annual show in the same building. This is indicative of the use which the special societies will, we trust, make of the Hall in future, and so obviate even the appearance of schism. The address from the National Rose Society, signed by the DEAN of ROCHESTER, and presented by Mr. E. MAWLEY, is another welcome indication in the same direction. Foreign societies were also not backward in their congratulations to the parent Society on this happy occasion.

There remains but one thing for the Fellows and exhibitors, who derive such benefit from the Society's meetings, to do, and that is to clear off the debt on the building as soon as possible. A pound apiece from each of the existing Fellows, still more the doubling of their annual subscriptions for a year or two, would suffice to bring about this consummation. Surely it is not unreasonable to hope that the Fellows will follow the example set them by their Majesties and contribute of their means to free the Society from encumbrance!

Whilst we are complacently congratulating ourselves on the erection of the Hall and offices we have yet further reason for profound gratitude. There can be no longer any question whether "home" or "garden" should have precedence—we have both. Sir THOMAS HANBURY, as our readers are aware, has, with fine prescience and recognition of the requirements of the Society, presented, in trust to the Society, the beautiful and interesting garden at Wisley formerly belonging to Mr. G. F. WILSON. Houses are in course of erection there, and it is hoped that in the near future adequate provision will also be made for the establishment of a research laboratory under the superintendence of a competent scientific director. For the present, however, we think the main energies of the Society should be devoted to the completion of the "Headquarters," and to the extinction of the building debt.

And thus a satisfactory answer has been obtained to the eagerly debated question, How best shall we celebrate the Centenary of the Royal Horticultural Society?



FIG. 30.—VIEW FROM THE PORCH OF THE NEW ROYAL HORTICULTURAL SOCIETY'S HALL, LOOKING OUT ON VINCENT SQUARE—10 ACRES OF GRASS!

(Photograph by J. Gregory.)

liberality of Lord ROTHSCILD, Messrs. H. J. ELWES, ARTHUR SUTTON, Mr. N. N. SHERWOOD, Mr. PIERPONT MORGAN, and others, a fund was started for the erection of a Hall in Vincent Square, Westminster, behind the

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP;
AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

*. FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 76.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
CAITHNESS	Over; very good	Average; good	.....	Over; good	.....	.....	Over; very good	Over; very good	.....	W. F. Mackenzie, The Gar- dens, Thurso Castle, Thurso
MORAYSHIRE	Under	Average	Over	Under	Average	Average	Over	Average	.....	D. Cunningham, Darnaway Castle Gardens, Forres.
ORKNEYS	Over; good	Under; bad	.....	Average; very good	Under; very good	.....	Over; very good	Over; very good	.....	Thos. McDonald, Balfour Castle Gardens, Kirkwall, Orkney.
ROSS-SHIRE	Over; very good	Over; good	Over; good	Average	Average; good	Under	Over; very good	Over; very good	.....	Henry Henderson, The Gar- dens, Cromarty House, Cromarty
1, Scotland, E.										
ABERDEENSHIRE ...	Average; good	Average; good	Average; good	Average; good	.....	.....	Average; good	Average; very good	.....	James Grant, Rothienorman Gardens, Rothie
	Average; very good	Average	Under	.....	.....	.....	Over; very good	Over; very good	.....	John Brown, Delgaty Castle Gardens, Turfiff
	Over; good	Average	Average; good	Average; good	.....	Under	Over; very good	Over; good	.....	Simon Campbell, Fyvie Castle Gardens, Fyvie
	Average	Average	.....	Average	.....	.....	Over	Average	.....	John M. Troup, Balmoral Castle Gardens, Ballater
BANFFSHIRE	Average; good	Under; bad	Under; bad	Average; good	Under; bad	Under; bad	Average	Over; very good	.....	J. Fraser Smith, Cullen House Gardens
BERWICKSHIRE	Over; very good	Under	Over; very good	Average; good	Under; good	Average; good	Over; very good	Over; very good	Under	James Gemmell, Ladykirk Gardens, Norham-on-Tweed
	Over; very good	Average	Average	Average	.....	Under	Over	Over; very good	.....	Jas. Hamilton, Manderston Gardens, Duns
	Over; good	Average; good	Average; good	Average; good	.....	.....	Average; good	Average; good	.....	John Cairns, The Hirsell Gar- dens, Coldstream
CLACKMANNAN- SHIRE	Over; very good	Average	Under	Under	Average	Under	Average	Average; very good	Under	A. Kirk, Norwood Gardens, Alloa
	Average	Average	Average; good	Over; good	.....	.....	Average; good	Over; very good	.....	A. Blackwood, Academy Gar- dens, Dollar
FIFESHIRE	Average	Under	Under	Under	.....	Under	Over; very good	Over; good	.....	William Henderson, Balbir- nie Gdns., Markinch, Fife
	Average; good	Under	Average	Average	.....	.....	Average	Average	.....	Peter McRobbie, Tarvit Gar- dens, Cupar
FORFARSHIRE	Average	Under	Average	Average	.....	.....	Average	Average	.....	W. McDowall, Brechin Castle Gardens, Brechin
	Average; good	Under; bad	Under; good	Under; good	.....	Under; bad	Average; good	Over; good	.....	Thos. Wilson, Glamis Castle Gardens, Glamis
	Under	Under	Under	Average; good	.....	.....	Average	Average; good	.....	William Allison, The Gardens, Seaview, Monifieth
HADDINGTONSHIRE	Average; good	Average; good	Under; good	Average	Under	Average; good	Under; good	Over; good	.....	R. P. Brotherton, Tynning- hame Gardens, Prestonkirk
	Under	Average; good	Under	Average	Under	Average; good	Over; very good	Over; very good	.....	William Galloway, Gosford Gardens, Longniddry
KINCARDINESHIRE..	Average	Under	Average	Average; good	Under	.....	Over Over	Average	.....	John M. Brown, Blackhall Castle Gardens, Banchory, Aberdeen
	Average	Under	Average	Average; good	Not grown Outside	Not grown outside	Over	Over; good	.....	William Knight, The Gardens, Pasque, Laurencekirk
MIDLOTHIAN	Average; good	Average; good	Under; bad	Average; good	.....	Under; good	Over; good	Over; good	Under	James Whytock, Dalkeith Gardens, Midlothian
	Average; very good	Under; bad	Under; good	Average; good	.....	Under; good	Over; very good	Average; good	.....	D. Kidd, Carbery Tower Gardens, Musselburgh
PEEBLESSHIRE	Average; good	.....	Under; good	Over; very good	.....	.....	Over; very good	Over; good	.....	M. McIntyre, The Glen Gar- dens, Innerleithen
	Over; good	Under	Average	Average	.....	.....	Over; good	Average; good	.....	William Young, Stobo Castle Gardens, Stobo
	Over; good	Average	Over; good	Over; good	.....	.....	Over; good	Over; good	Over	Wm. McDonald, Cardrona Gardens, Innerleithen
PERTHSHIRE	Average; good	Average; good	Average; very good	Under; good	Average; very good	Average; good	Average; good	Over; very good	.....	J. Farquharson, Kinfauns Castle Gardens, Perth
	Average; good	Under; good	Average; good	Average; good	Average; good	.....	Over; good	Average; good	.....	James Ewing, Castle Menzies, Aberfeldy
	Over	Average	Under	Under	.....	.....	Over; very good	Over; very good	.....	George Croncher, The Gar- dens, Ochiltree, Crieff
6, Scotland, W.										
ARGYLLSHIRE	Over; very good	Average; good	Average; very good	Average; good	Average; good	.....	Over; very good	Over; very good	Under; bad	D. S. Melville, Poltalloch Gardens, Lochgilphead
	Over; good	Under	Over; good	Average	.....	.....	Average; good	Over; very good	.....	Henry Scott, Torloisk - by- Aros, Isle of Mull
AYRSHIRE	Over; good	Under	Average	Average	None; all destroyed by shot-hole fungus	.....	Over; good	Over; good	.....	William Priest, Edlinton Gar- dens, Kilwinning
	Average; good	Average; good	Average; good	Over; good	.....	Under; good	Over; very good	Over; very good	Average; good	D. Buchanan, Bargany Gar- dens, Bailly
	Over; good	Under	Over	Over; good	Average; good	Under	Average	Over; good	.....	Thomas Gordon, Ewenfield Gardens, Ayr
BUTESHIRE	Average	Under	Under	Under	Under	.....	Average	Over; very good	.....	M. Heron, Mount Stewart House Gdns., Rothesay
DUMBARTONSHIRE ..	Over; good	Under	Under	Under	.....	Under	Over; good	Over; good	Under	George McKay, Balloch Castle Gardens
	Over	Over	Under	Average; good	Average	.....	Over	Average; good	.....	D. Stewart, Knockderry Castle, Core
DUMFRIESSHIRE	Average; good	.....	Under; good	Average; good	.....	Under; good	Average; good	Average; good	.....	John Urquhart, Hoddam Castle Gdns., Ecclefechan
	Average; good	Under; bad	Over; good	Average; good	.....	.....	Over; good	Average; good	.....	R. Wishart, Burnfoot Gar- dens, Langholm
	Over; good	Average; good	Over; very good	Average; good	Average; good	Average; good	Over; very good	Over; extra good	Average	John Mackinnon, Terregles
	Average; good	Under; good	Average; good	Average; good	.....	.....	Over; good	Over; good	.....	Jas. McDonald, Dryfeholm Gardens, Lockerbie

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
6, Scotland, W.										
KIRKCUDBRIGHT- SHIRE	Over; good	Average ; very good	Average ; good	Average ; good	.....	.....	Over ; very good	Over ; very good	.....	Neil Macfadyen, Glenlie Gardens, New Galloway
LANARKSHIRE	Over; good	Average ; very good	Over; good	Average ; good	Average ; good	.....	Over ; very good	Over ; good	.....	Wm. Thomson, Cally Gar- dens, Gatehouse
NAIRNSHIRE	Average ; good	Average ; good	Average ; good	Under ; good	Average ; good	.....	Over ; good	Over ; good	.....	James Miller, Castlemilk Gardens, Rutherglen
RENFREWSHIRE	Average	Average	Under	Over	Under	Under	Over	Average ; good	.....	John Anderson, Holme Rose Gardens, Croy, Gollanfield
STIRLINGSHIRE	Average	Under	Under	Average	Under	.....	Average	Average ; very good	.....	John Methven, Blythswood Gardens, Renfrew
WIGTONSHIRE	Over; good	.....	Under	Average	.....	.....	Under	Average	.....	Thomas Lunt, Ardgowan Gardens, Inverkip
.....	Over; very good	Average ; good	Average ; good	Average ; good	.....	.....	Over ; good	Average ; good	.....	Alexander Crosbie, Buchan- an Castle Gardens, Drymen
.....	Average ; good	Over; very good	Average ; good	Average ; good	Average	Under	Over ; very good	Over ; very good	.....	John Bryden, Dunragit Gar- dens, Dunragit
.....	.....	Average ; good	Average ; good	Average ; good	.....	.....	Over ; good	Over ; good	Under	James Day, Galloway House Gardens, Garliestown
ENGLAND—										
2, England, N.E.										
DURHAM	Average	Average	Under	Average	Average	Under	Over ; very good	Over ; very good	Average	Robt. Draper, Seaham Hall Gdns., Seaham Harbour
.....	Over; good	Average ; very good	Average ; good	Over; good	.....	Under; good	Over; good	Over; very good	.....	James Noble, Woodburn Gardens, Darlington
.....	Under; bad	Average	Average	Under	.....	Under	Over; good	Over; good	.....	James Machar, Snelt House Gardens, Howden-le-Wear, R.S.O.
NORTHUMBERLAND.	Average ; good	Average ; good	Average ; good	Over; good	Average ; good	Under; good	Over; good	Average ; good	.....	George H. Aekroyd, Howick Gardens, Jesbury
YORKSHIRE	Under	Under	Under	Under	Under	Under	Over	Over; very good	.....	Bailey Wadds, Birdsall Gar- dens, York
.....	Over; good	Average ; good	Under; bad	Average ; good	Under; good	Under; good	Average ; good	Average ; good	.....	John McClelland, Ribston Hall Gardens, Wetherby
.....	Over; good	Average	Under; bad	Average	Average ; good	Under; bad	Average ; good	Average ; good	Average	John Snell, The Gardens, Farnley Hall, Otley
.....	Average ; good	Under; good	Under; good	Average ; good	Over; good	Under	Average ; good	Average ; good	Under	J. S. Upex, Wiggathorpe Gardens, York
.....	Over; good	Under	Average	Over; good	Under	Under	Over; good	Over; good	Over; good	J. Allsop, Dalton Hall Gdns., Dalton Holme, Beverley
.....	Average ; good	Over; good	Average ; good	Average ; good	Average	Under; very good	Over; very good	Over very good	Under	Chas. Simpson, Newby Hall Gardens, Ripon
.....	Average ; good	Under	Under	Under	Under	Under	Under	Over	Under	Henry J. Clayton, Grimston Gardens, Tadcaster
.....	Over; good	Average ; good	Average ; good	Average ; good	Over; good	Under; good	Over; very good	Over; very good	.....	S. Keppence, Thirkelby Park Gardens, Thirsk
.....	Average	Average	Under	Morello ; over	.....	Under	Over; good	Over; very good	.....	G. Batley, Wentworth Castle Gardens, Barnsley
.....	Average	Under	Average	Over; very good	Under	Under	Over; very good	Over; very good	Under	A. E. Sutton, Castle Howard Gardens, Welbourn
3, England, E.										
CAMBRIDGESHIRE	Over; very good	Over; very good	Average ; good	Under; bad	Over; very good	Average ; good	Over; very good	Over; very good	Over; good	R. Alderman, Babraham Gardens, Cambridge
ESSEX	Over; very good	Average ; good	Under; bad	Average ; bad	Over; very good	Average ; good	Average ; good	Average ; good	.....	Henry Lister, Easton Lodge Gardens, Dunmow
.....	Over; very good	Average ; good	Average	Average	Average	Average	Average	Over; very good	Average	H. W. Ward, Lime House, Rayleigh
.....	Average	Under	Under	Average	Average	.....	Average ; good	Over; good	Average	W. R. Johnson, Stanway Hall Gardens, Colchester
LINCOLNSHIRE	Over; very good	Under	Under	Average	Under	Under	Over; very good	Over; very good	.....	H. Vinden, Harlaxton Manor Gardens, Grantham
.....	Over; good	Under; good	Under; bad	Average ; bad	Over; very good	Average ; good	Over; good	Over; very good	Under; bad	F. L. Fleming, Weelsby Old Hall Gardens, Grantham
NORFOLK	Over; very good	Over; very good	Average ; very good	Average ; very good	Over; very good	Under; good	Over; very good	Over; very good	.....	Thomas H. Cook, The Royal Gardens, Sandringham
.....	Over; very good	Over; very good	Average ; good	Average ; good	Average ; good	Under; good	Over; very good	Over; very good	Over	Ernest C. Parslow, Shadwell Court Gardens, Thetford
SUFFOLK	Over	Over	Average	Average ; good	Over	Under	Over; very good	Under; bad	.....	John Bannerman, Branches Park Gardens, Newmarket
.....	Average ; very good	Over; very good	Under	Over; good	Average ; good	Under	Over; very good	Over; very good	Average	A. Melville, Moulton Pad- docks, Newmarket
.....	Over; good	Average ; good	Under	Average	Average	Under	Over; good	Over; very good	Average	H. Fisher, Flixton Road, Bungay
4, Midland Counties.										
BEDFORDSHIRE	Over; good	Average	Average	Under	Average	Average	Over; good	Over; good	Over; good	H. Nimmo, Cranfield Court Gardens, Woburn Sands, R.S.O.
.....	Over; good	Under	Under	Average	Under	Under	Average ; good	Average ; good	Average	H. W. Nutt, East End Farm, Flitwick
.....	Average ; very good	Average ; very good	Average ; good	Average ; good	Average ; good	Under; bad	Over; very good	Average ; very good	Average ; good	W. C. Modral, Old Warden Park, Biggleswade
.....	Over; good	Average ; good	Average	Average	Over; good	Over; good	Over; good	Over; good	Average	George Mackinlay, Gardens, Wrest Park, Ampthill
BUCKINGHAMSHIRE	Average ; good	Average ; good	Average	Under	Over; very good	Under	Over; very good	Over; very good	Average	James Wood, Hedsor Park, Bourne End
.....	Average ; good	Under	Under	Under	Average ; very good	Over; good	Over; good	Over; very good	Average	John Fleming, Wexham Park Gardens, Slough
.....	Average ; very good	Under	Average ; good	Average ; good	Over; very good	Under; good	Over; good	Over; good	Under	Chas. Page, Dropmore Gardens, Maidenhead
.....	Over; good	Average ; good	Under; good	Average ; good	Over; very good	Average ; good	Average ; good	Over; very good	.....	Geo. Thos. Miles, Lord Carrington's Estate Office, High Wycombe
.....	Average ; good	Under; bad	Under; good	Average ; bad	Average ; good	Average ; good	Over; very good	Over; very good	Average ; bad	W. Hedley Warren, Aston Clinton Gardens, Tring
.....	Average ; good	Under; bad	Over; good	Under	Average	Under	Average ; very good	Over; very good	Under	James MacGregor, Meuthmore Gardens, Leighton Buzzard
.....	Over; good	Average	Over; good	.....	.....	Under	Over; good	Over; very good	.....	H. Walters, Waddesdon Gar- dens, Aylesbury, Bucks
CHESHIRE	Average ; good	Average ; good	Under; bad	Average ; good	.....	Average ; good	Average ; good	Average ; good	.....	W. C. Breese, Moreton Hall Gardens, Congleton
.....	Average ; good	Under; good	Under; good	Average ; good	.....	.....	Average ; good	Over; good	.....	W. Chester, Chatsworth Gar- dens, Chesterfield
DERBYSHIRE	Over; good	Average ; good	Under; good	Over; good	Average ; good	.....	Over; good	Average ; good	.....	J. C. Tallack, Shipley Hall Gardens, Derby
.....	Average	Average	Average	Over	.....	Average	Average ; good	Average ; good	Average	T. Keetley, Darley Abbey Gardens, Derby
.....	Over	Over	Average	Average	.....	Average	Over	Over	Under	J. H. Goodacre, Elvaston Castle Gardens, Derby
HERTFORDSHIRE	Average ; good	Average	Under	Average ; good	.....	.....	Average ; good	Over; very good	Average	Thomas Hedley, The Gardens, Lane House, Kings Walden, Hitchin

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTABINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
HERTFORDSHIRE.....	Over ; good	Under ; good	Under ; good	Average ; very good	Over ; very good	Average ; good	Over ; very good	Over ; good	.....	C. R. Fielder, The Gardens, North Myms Park, Hatfield
	Over ; good	Average	Average ; good	Under	Over ; good	Under	Over ; very good	Over ; good	Over	C. E. Martin, The Hoo Gardens, near Welwyn
	Over ; good	Under ; good	Under ; good	.....	.....	.....	Average ; good	Average ; good	Walnuts over ; very good	Thomas Rivers & Son, Sawbridgeworth
	Over	Under	Under	Average	Over	.....	Over ; good	Over ; good	Walnuts over Hazel Nuts under	G. Norman, The Gardens, Hatfield House, Hatfield
LEICESTERSHIRE ...	Over ; good	Under ; good	Over ; very good	Under ; good	Average ; good	Under ; good	Over ; very good	Over ; very good	Over	Edwin Beckett, Aldenham House Gardens, Elstree
	Average	Under	Under	Average	.....	Under	Over ; very good	Over ; good	.....	Geo. Milford, Egerton Lodge Gardens, Melton Mowbray
	Over ; good	Average ; good	Under ; good	Morellos average ; good	Average ; good	Under ; good	Over ; good	Over ; good	Walnuts under ; good	Daniel Roberts, The Gardens, Prestwold, Loughborough
	Over ; very good	Average ; very good	Under ; good	Over ; good	Under	Over ; very good	Over ; very good	Over ; very good	Under	W. H. Divers, Belvoir Castle Gardens, Grantham
NORTHAMPTON-SHIRE	Average ; good	Average ; good	Average ; good	Over ; very good	.....	.....	Over ; good	Average ; good	.....	W. Wadsworth, Barkly Lane, Queensborough
	Average ; good	Average ; good	Under ; good	Average ; good	Under ; good	Average ; good	Over ; very good	Over ; very good	Average	Robert Johnston, Wakefield Lodge Gardens, Stony Stratford
	Over ; good	Average ; good	Average ; good	Over ; good	Under	Under	Over ; good	Over ; very good	Over	H. Turner, Fineshade Abbey Gardens, Stamford
	Over ; good	Over ; good	Over ; good	Average ; good	Under ; good	Under ; good	Over ; very good	Over ; very good	Under ; good	J. Sheenan, The Gardens, Holdcote House, Northampton
NOTTINGHAMSHIRE.	Average ; good	Average ; good	Under ; good	Under ; bad	Average ; good	Under ; good	Over ; good	Over ; good	Average ; good	Amos Parr, Holme Pierrepont Hall, Nottingham
	Over ; good	Average ; very good	Under ; good	Average ; good	Under ; good	Over ; very good	Average ; good	Over ; very good	Average ; good	J. Roberts, Welbeck Gardens, Worksop
	Over	Over	Over	.....	Average	Average	Over	Average	Average	J. R. Pearson & Sons, Chilwell Nurseries, Lowdham
	Average ; good	Over ; good	Under	Average ; good	.....	Average	Over ; good	Average ; good	.....	A. W. Cullloch, Estate Office, Newstead Abbey, Nottingham
OXFORDSHIRE	Average ; good	Average ; good	Average	Average ; good	Average ; over ; good	Average ; under	Over ; good	Over ; good	Average ; good	P. O. Knowles, Friar Park Gdns., Henley-on-Thames
	Over ; very good	Average ; very good	Under	Under	Average ; very good	Under	Gooseberries over ; very good	Over ; very good	Over ; very good	John A. Hall, Shiplake Court Gardens, Henley-on-Thames
	Average ; good	Under	Over ; good	Average ; good	Under	Under	Average ; good	Over ; very good	Under	A. J. Long, Wyfold Court Gardens, Reading
	Over ; very good	Over ; good	Average ; good	Average ; good	Average ;	Under	Over	Over ; good	Average	A. S. Kemp, Broadway Shifnal
SHROPSHIRE	Over ; good	Under ; good	Under ; good	Under ; good	Average ; good	Under ; good	Under ; good	Average ; good	Average ; good	James Loudon, The Quinta Gardens, Chirk, Ruabon
	Over ; good	Under	Average ; good	Average ; bad	Average ;	Under	Over ; very good	Over ; very good	Average ; good	T. Bannerman, Blithfield Gardens, Rugby
	Average ; fair	Average	Average ; good	Average ; good	Average ; good	Under	Average ; good	Average ; good	Under ; bad	G. H. Green, Enville Gardens, Stourbridge
	Average ; good	Average	Average	Average	.....	Average	Over ; good	Average ; good	.....	C. A. Bayford, Shugborough Gardens, Stafford
STAFFORDSHIRE	Over ; good	Average ; good	Under	Under	.....	Average ; good	Over ; good	Over ; good	Average	G. Woodgate, Rolleston Hall Gardens, Burton-on-Trent
	Average ; good	Average	Under	Under	Average	Under	Average ; good	Average ; good	Under	Edwin Gilman, Ingestre Gardens, Stafford
	Over ; good	Average ; good	Under ; good	Over ; good	.....	Average ; good	Average ; bad	Average ; bad	.....	John Wallis, Moore, Newcastle
	Over ; very good	Under ; bad	Under ; bad	Morellos good	.....	Average	Average ; dried up	Average ; dried up	.....	W. Bennett, Rangemore Gardens, Burton-on-Trent
WARWICKSHIRE	Over ; good	Average ; good	Under ; good	Average ; good	Over ; good	Over ; very good	Over ; good	Over ; very good	Under	J. Rodger, The Gardens, Charlecote Park, Warwick
	Average ; good	Average ; good	Under ; bad	Under ; good	Average ; good	Under ; bad	Average ; good	Over ; good	Walnuts : Over ; good Filberts and Cobs : Under ; bad	H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth
	Average ; good	Under	Under	Average ; good	Under	Under	Average ; good	Average ; good	Over ; good	W. Miller, Berkswell, Coventry
	Under	Average ; very good	Under	Average	Average	.....	Average ; very good	Average ; good	.....	Thos. Masters, Shuckburgh Gardens, Daventry
5, Southern Counties.										
BERKSHIRE.....	Average	Average	Average	Under	Average	Average	Over	Over	Average	J. Howard, Benham Park Gardens, Newbury
	Over	Under	Under	Under	Average	Under	Average ; good	Over ; good	Under	William Fyfe, Lockinge Gardens, Wantage
	Average ; good	Average ; good	Under ; good	Under ; bad	Average ; bad	Average ; good	Average ; good	Over ; good	Average ; good	James Coombes, Englefield Gardens, near Reading
	Over ; very good	Under ; good	Under ; good	Under	Under	Average	Over ; very good	Over ; very good	Average ; good	Wm. Pope, Highclere Gardens, Newbury
DORSETSHIRE	Over ; good	Average ; good	Average ; good	Over ; good	.....	Under ; good	Over ; good	Over ; very good	Average	Thos. Denny, Down House Gardens, Blandford
	Average over ; good	Under	Under	Under ; good	Average ; good	Under ; bad	Average ; good	Average ; good	Under	Ben Campbell, The Gardens, Kingston House, Dorchester
	Over ; very good	Average ; good	Average	Average	Under	Under ; bad	Average ; good	Over ; very good	Under	T. Torton, Castle Gardens, Sherborne
	Under ; good	Under ; good	Under ; bad	.....	Under ; good	Average ; very good	Over ; good	Over ; very good	Average	H. Kempshall, Abbotsbury Gardens, Dorchester
HAMPSHIRE.....	Average ; good	Average ; good	Under ; bad	Under	Over ; good	Under	Average ; good	Over ; good	Average ; good	Arthur Lee, Palace House Gardens, Beaulieu, Brockenhurst
	Over ; very good	Under	Average ; very good	Average ; good	Over ; good	.....	Over ; very good	Over ; very good	Under	Edwin Molyneux, Swanmore Park, Bishop's Waltham
	Over ; good	Average ; good	Under ; good	Under ; bad	.....	Under ; good	Average ; good	Over ; very good	Average ; good	A. G. Nichols, Strathfieldsaye Gdns., Mortimer, R.S.O.
	Over ; good	Average	Average	Average	Average	Average ; good	Over ; very good	Over ; very good	Average	James Wasley, Sherfield Manor Gdns., Basingstoke
KENT.....	Over	Average	Under	Under ; bad	Average	Under	Over ; good	Over ; very good	Average	J. Bowerman, Hackwood Park Gardens, Basingstoke
	Average ; good	Under	Under ; good	.....	Over ; good	Under	Over ; good	Over ; good	.....	Noah Kneller, Malshanger Park, Basingstoke
	Over ; good	Average ; good	Average ; good	Over	Under	Average	Over ; good	Over ; very good	Average	Thos. Leith, Beaurepaine Park Gardens, Basingstoke
	Average ; good	Under ; bad	Under ; good	Average ; very good	Average ; good	Under ; poor	Average ; good	Over ; very good	Average ; good	F. B., Aylesford, Kent

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
KENT	Under	Under	Under	Under	Average	.....	Over	Over	Average	George Woodward, Barham Court Gardens, Maidstone
	Over ; good	Average ; good	Under ; bad	Under ; bad	Average	.....	Average ; good	Over ; good	Average	George Bunyard, Maidstone
	Average ; good	Under	Under	.....	Average	.....	Average	Over ; good	Under	Wm. Lewis, East Sutton Park Gardens, Maidstone
	Over	Average ; good	Average	Under	Average	.....	Average ; good	Over ; very good	Under	Geo. Fennell, Bowden, Tonbridge
	Under ; good	Under ; bad	Average ; good	Under ; good	.....	.....	Over ; good	Over ; good	Average ; good	B. Champion, Mereworth, Maidstone
	Under	.....	Average	Under ; bad	.....	.....	Average ; good	Average ; good	Under	George Lockyer, Mereworth, Maidstone
	Over ; very good	Over	Average	Under	Over	Over	Over	Over ; very good	Over ; very good	George Huft, Lullingstone Castle, Eynsford
MIDDLESEX	Over ; good	Over ; very good	Under	Average	Under ; good	Average ; good	Over ; very good	Over ; very good	.....	W. E. Humphreys, Blendon Hall, Bexley
	Under ; good	Under ; fair	Under ; good	Under ; bad	Over ; good	Under ; bad	Average ; good	Over ; good	Under	Geo. Wythes, Syon House Gardens, Brentford, W.
	Over ; good	Average	Average	Average	Over ; good	.....	Over ; good	Over ; good	Average	H. Markham, Wrotham Park Gardens, Barnet
	Average ; good	Under ; good	Under ; bad	Under ; good	Average ; good	.....	Over ; good	Over ; very good	.....	James Hudson, Gunnersbury House Gardens, Acton, W.
	Average ; good	Average ; good	Under ; bad	Under ; bad	Under ; good	Average ; good	Over ; bad	Average ; good	Average	W. Watson, The Gardens, Harefield Place, Uxbridge
	Average	Under	Average	Average	Average	.....	Over	Over ; good	Average	W. Bates, Cross Deep Gardens, Twickenham
	Average	Under	Under	Under	Over	.....	Average	Over ; very good	Wall Nuts over	Robert H. Cronk, Cranford House Gardens, Cranford, Hounslow
SURREY	Average	Under	Under	.....	Average	.....	Average ; good	Average ; good	Under	William Bain, Burford Gardens, Dorking
	Average ; good	Under ; bad	Under ; good	.....	.....	.....	Average ; good	Average ; very good	Average ; good	S. T. Wright, R.H.S. Gardens, Wisley, Ripley
	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	Under ; good	Over ; good	Over ; very good	Over ; good	W. P. Bond, The Gardens, Gatton Park, Reigate
	Over ; very good	Over ; very good	Average ; good	Average ; good	Average ; good	Under ; bad	Over ; very good	Over ; very good	.....	J. F. McLeod, Dover House Gardens, Roehampton
	Average ; good	Average ; good	Under	Average ; very good	Average ; good	Average ; good	Average ; good	Over ; very good	Under	C. W. Knowles, Bagshot Park Gardens, Bagshot
	Average ; good	Average ; good	Under ; good	Over ; very good	Over ; good	Under	Over ; very good	Over ; very good	Over ; good	G. J. Hunt, Gardens, Ashstead Park, Epsom
	Over	Vastly over	Average	.....	Average	.....	Average	Vastly over	.....	W. Wilks, Rev., Shirley Vicarage, Croydon
	Over ; good	Over ; good	Average	Average ; good	Over ; good	Under	Over ; good	Over ; good	Over	W. Honess, Cobham Park Gardens, Cobham
	Over	Under	Under	Average	.....	.....	Average	Over ; good	Under	C. J. Salter, Woodhatch Lodge Gardens, Reigate
	Average ; good	Under	Under	Under	Average ; good	Under	Over ; good	Over ; good	.....	Alexander Dean, 62, Richmond Road, Kingston-on-Thames
	Over	Average	Average	Average	Under	Average	Over	Over	Over	Geo. Kent, Norbury Park Gardens, Dorking
SUSSEX	Average ; good	Average ; good	Under ; good	Under	.....	.....	Over ; very good	Over ; very good	Average ; good	Geo. Halsey, Riddings Court Gardens, Caterham
	Over	Under	Average	Average ; good	Average ; good	Under	Over	Average	Average ; good	W. C. Leach, Albury Park Gardens, Guildford
	Over	Average ; good	Average ; good	Under	Average	Average ; good	Over ; very good	Over ; very good	Average	W. W. A. Wilson, Eridge Castle Gardens, Tunbridge Wells
	Over ; good	Under	Under	Under	Under	.....	Average ; good	Over ; very good	Average	Alex. Reid, Possingworth Gardens, Cross-in-Hand
	Average ; good	Under	Under ; very scarce	Under ; good	Average ; good	Under	Under ; good	Over ; good	Under	E. Burbury, Castle Gardens, Arundel
	Over ; good	Under	Over ; good	Under ; good	Over ; good	.....	Over ; very good	Over ; good	Under	W. H. Smith, West Dean Park Gardens, Chichester
	Over ; very good	Average ; very good	Over ; good	Under ; bad	Average ; good	.....	Average ; good	Over ; good	Average	W. Brunsden, Brambletye Gardens, East Grinstead
	Over ; very good	Under ; good	Under ; good	Under ; bad	Over ; good	Under ; bad	Average ; very good	Average ; very good	Under ; good	A. B. Waddis, gr. to Sir Weetman Pearson, Bart., M.P., Paddockhurst, Worth
	Over ; good	Over ; very good	Over ; very good	Average ; good	Average ; good	Average ; good	Over ; very good	Over ; very good	Average ; good	Geo. Grigg, The Gardens, Ashburnham Place, Battle
	Over ; good	Average ; good	Average	Average ; good	Under	.....	Average ; good	Over ; very good	Average ; good	Chas. Jones, Ote Hall Gardens, Burgess Hill
	Over good	Average ; good	Average ; good	Under ; bad	Over ; very good	Under ; bad	Over ; good	Over ; very good	Average ; good	C. Allen, Worth Park Gardens, Crawley
WILTSHIRE	Over ; very good	Average ; good	Under ; bad	Average ; good	Over ; very good	Average ; very good	Over ; very good	Over ; very good	Average	T. Challis, The Gardens, Wilton House, nr. Salisbury
	Over ; good	Average ; good	Under ; good	Average ; good	Average ; good	Under	Average ; good	Over ; good	.....	George Brown, Bowood Gardens, Calne
7, England, N.W.										
LANCASHIRE	Over ; good	Over ; good	Under ; good	Average	Average	.....	Over ; good	Over ; good	.....	Wm. P. Roberts, Cnerden Hall Gardens, Preston
	Average	Average	.....	Good	.....	.....	Average	Average ; good	.....	Gardener, Gawthorpe Hall, Burnley
	Average ; good	Average ; good	Under	Under	.....	.....	Average ; good	Average ; good	.....	E. F. Hazelton, Knowsley Gardens, Prescott
	Average	Average	Under	Average	.....	.....	Over	Over	.....	Wm. Ashton, Wrightington Hall Gardens, Wigan
WESTMORELAND	Under	Under ; bad	Average ; good	Average ; good	.....	Under ; bad	Over ; good	Over ; good	.....	F. Clarke, Lowther Castle Gardens, Penrith
	Average ; good	Under ; good	Under ; good	Under ; good	.....	.....	Over ; very good	Over ; very good	.....	W. A. Miller, Underley Gardens, Kirkby Lonsdale
	Over ; very good	Under ; good	Average ; good	Over ; very good	Average ; good	.....	Average ; good	Over ; good	.....	W. Gibson, The Gdns., Levens Hall, Milnthorpe, Westmoreland
8, England, S.W.										
CORNWALL	Average ; good	Under ; bad	Average ; good	Average	Under	Under	Average ; very good	Over ; very good	.....	W. H. Bennett, Menabilly Gardens, Par Station, Cornwall
	Average	Average	.....	Under	Under	.....	Over	Over ; very good	.....	Archibald Mitchell, Tehidy Park Gardens, Camborne
	Average ; good	Average ; good	Average ; good	Under ; bad	Average ; good	.....	Over ; good	Over ; good	.....	Alfred Read, Port Eliot Gardens, St. Germans
	Average ; good	Average ; good	Under ; bad	Under ; good	Under	Under	Under ; bad	Average ; very good	Under	A. C. Bartlett, Pencarrow Gardens, Washaway, R.S.O.
DEVON	Average ; good	Average ; good	Over ; good	Under ; bad	Average ; good	Under ; bad	Over ; good	Over ; very good	Average ; good	Andrew Hope, 38, Prospect Park, Exeter
	Over	Under	Under	Under	Average	.....	Over ; good	Over ; very good	.....	Geo. Baker, Membland Gardens, near Plymouth
	Over ; very good	Average ; very good	Average ; very good	Under ; bad	Over ; very good	Under	Over ; very good	Over ; very good	Under	James Mayne, Bieton Gardens, East Budleigh

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
8, England, S.W.										
DEVON	Average : good Under ; very good Under	Average Under ; bad Under	Under Average ; good Average	Under Under ; good Average	Average Average ; very good Average	Under	Over Average ; good Average	Over Over ; very good Over ; good	..... Under ; bad Under	George Foster, Glendaragh Gardens, Teignmouth. C. W. Bloye, The Gardens, Pinhay, Lyne Regis T. H. Slade, Poltimore Gardens, Exeter
GLOUCESTERSHIRE ..	Average ; good Average	Under ; good Under	Average ; good Under	Average ; good Average	Average ; good Average	Average ; good Under	Over ; good Average	Over ; very good Over ; very good	..... Under	G. W. Marsh, St. George's Nursery, Cheltenham William Keen, The Gardens, Bowden Hall, near Gloucester
HEREFORDSHIRE ...	Over ; very good Average ; good Average	Under ; good Under ; good Under	Under ; good Average ; good Under	Average ; good Average Under	Over ; good Average ; good Under	Under Under Under	Over ; good Over ; very good Over ; good	Over ; good Over ; very good Average ; good	Under Average Under	John Banting, Tortworth Gardens, Falfield H. Berry, Highnam Court Gardens, Gloucester Geo. Milne, Titley Court, Titley, R.S.O.
MONMOUTHSHIRE ...	Average ; good Under ; good Over ; good Over	Under ; good Average ; good Average ; good Average	Average ; good Under Under Average	Average ; good Under ; bad Average Under	Average Average Average ; good Over	Under Under Under Average ; good Average	Average ; very good Average ; good Over ; very good Average ; good Over ; good	Over ; good Over ; very good Over ; good Over ; good Over ; good	Average Average Under Average Under	John Watkins, Pomona Farm, Withington Thos. Spencer, Goodrich Court Gardens, Ross John Lockyer, Poultyool Park Gardens W. F. Wood, Llanfrechfa Grange Gardens, Caerleon Thos. Coomber, The Hendre Gardens, Monmouth Henry Townsend, Maindiff Court Gdns., Abergavenny, J. Bashan, Fair Oak Nurseries, Bassaleg, near Newport William Hallett, Cossington, Bridgewater
SOMERSETSHIRE	Average ; good Over ; very good Over ; very good Over ; very good Average ; good Average ; good	Under ; good Over Average ; very good Over ; very good Average ; good Average ; good	Average ; very good Average Over ; very good Under ; good Over ; good	Average ; good Under Average ; good Under ; bad Over ; good	..... Under Under ; good Under ; good Average ; very good	Average ; very good Under Under Over ; very good Average ; good	Over ; bad Average Over ; very good Over ; very good Over ; good Over ; good	Over ; good Over Over ; very good Over ; very good Over ; good Over ; good	Under Over Average Average ; good Average ; good	John Crook, Forde Abbey Gardens, Chard Samuel Kidley, Nyncehead Court, Wellington A. Young, Willey Court Gardens, Stourport W. Crump, Madresfield Court Gardens, Malvern F. Jordan, Impney Gardens, Droitwich A. A. Pettigrew, Hewell Gardens, Redditch
WALES—										
ANGLESEA	Over ; very good	Over ; very good	Average	Under	.....	.....	Over ; very good	Over ; very good	.....	Thos. Marsh, Penrhos Gardens, Holyhead
BRECONSHIRE	Average ; very good	Under ; good	Under ; good	Under ; bad	Average ; very good	Under ; good	Over ; very good	Over ; very good	.....	Albert Ballard, Glannusk Park Gardens, Crickhowell
CARDIGANSHIRE	Over ; very good	Average ; good	Under ; good	Average ; good	.....	.....	Average ; good	Over ; good	Average ; good	George Wright, Bronwydd Gardens, Maeslyn, R.S.O.
CARMARTHENSHIRE ..	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	.....	Average ; very good	Over ; very good	Average	William Parker, Neuaddiawr, Llandovery
CARNARVONSHIRE ...	Average ; good Over ; good Over	Under Average ; good Average	Under Average ; good Average ; good	Average Average ; good Morellos Average	Under ..... .....	..... ..... .....	Over Over ; very good Over ; very good	Average Over ; good Average	..... Average	Il. Weaver, Vaynol Park Gardens, Bangor T. Evans, Gwydyr Castle Gardens, Llanrwst W. Speed, Penrhyn Castle Gardens, Bangor Walter Weir, Rhosnesney Gardens, Wrexham
DENBIGHSHIRE	Average ; good Over ; very good Over ; very good Over ; very good	Average ; good Average ; good Average ; good Average ; good	Under Average Under ; bad Average ; good	Average ; good Average Morellos Average	Average Average	Average ; good Under Under ; bad Under ; bad	Over ; very good Over ; very good Over ; very good Over ; very good	Over ; good Over ; good Over ; good Over ; good	Average Under Average ; good Over	John Forsyth, Hawarden Castle Gardens, Chester Jas. Lind, Gardener, Dunraven Castle Henry R. Farmer, Castle Gardens, Cardiff Richard Milnes, Margam Park Gardens, Port Talbot J. S. Higgins, Rhûg Gardens, Corwen
MERIONETHSHIRE ...	Over ; good	Average ; good	Average ; good	Under ; bad	.....	Under ; good	Over ; very good	Over ; very good	.....	W. B. Fisher, Stackpole Gardens, Penbroke
PEMBROKESHIRE ...	Over Average	Under ; good Average	Average Average	Under Over	..... Average	..... .....	Average Average ; good	Over ; good Over	Under Average	Geo. Griffin, Slebech Park Gardens, Haverfordwest
IRELAND—										
9, Ireland, N.										
ARMAGH	Average ; good	Average ; good	Over ; very good	Under ; good	.....	.....	Over ; very good	Over ; good	.....	William R. Spenser, The Manor Gardens, Loughgall
GALWAY	Over ; good Over ; good Over ; good	Average ; good Average ; good Average ; good	Over ; very good Average ; good Average ; good	Under ; good Over ; good Average	..... ..... Average	..... ..... .....	Over ; good Over ; very good Over	Over ; very good Over ; good Over	Average ; Average	Thomas Dunne, The Gardens, Lough Cutra Castle, Gort And. Porter, The Gardens, Woodlawn John Rafferty, Castle Forbes, Newtown Forbes
LONGFORD	Over	Average	Average	Average	Average	.....	Over ; very good	Over ; very good	Under ; bad	Patrick Connolly, The Gardens, Craunmore, Ballinrobe
MAYO	Average ; very good Over ; good	Average ; good Under	Under ; bad Under	Under ; bad Average ; good	Average ; good Average	..... Average	Over ; very good Over ; very good	Over ; very good Over ; good	.....	Joseph Sangster, The Gardens, Lissadell, Sligo
SLIGO	Over ; good	Under ; very good	Under	Under	.....	.....	Over ; good	Over ; very good	.....	Fred W. Walker, The Gdns., Sion House, Sion Mills
TYRONE	Over	Average	Average	Average	.....	.....	Over	Over ; very good	Under	James Small, Caledon Castle Gardens, Caledon
10, Ireland, S.										
CLARE	Over ; very good	Average	Over ; very good	Under ; bad	.....	.....	Over ; very good	Average	.....	William Clarke, Castle Crine Gardens, Sixmilebridge
CORK	Average ; very good	Average ; good	Over ; very good	Average ; very good	Under	Average ; very good	Over ; very good	Over ; very good	.....	C. Price, The Gardens, Mitchellstown Castle, Mitchellstown
KILDARE	Over ; good	Over ; good	Over ; good	Over ; good	Under	Under	Over ; good	Over ; good	Average	Fredk. Bedford, Straffan House Gardens, Straffan Station
KILKENNY	Over ; good Over ; very good Over ; good	Average ; good Average on walls ; good Under ; good	Average ; good Average ; bad Under ; good	Average ; very good Average ; good Under ; bad	..... ..... Under ; bad	Under Under Under	Over ; very good Over ; very good Average ; good	Over ; good Over ; very good Over ; good	Average ; good Average	H. Carlton, Kilkenny Castle Gardens J. G. Weston, Bessborough Gardens, Piltown W. A. Bowles, Adare Manor Gardens, Limerick
LIMERICK	Over ; good	Under ; good	Under ; good	Under ; bad	Under ; bad	Under	Average ; good	Over ; good	.....

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
9, Ireland, N.										
ROSCOMMON	Over; good	Under	Under; good	Average; good	Average	.....	Over; good	Over; good	.....	Terence Rogers, Frenchpark House Gardens, French- park
WATERFORD	Over; very good	Average; very good	Under; good	Average; good	Over; good	.....	Over; very good	Over; very good	.....	Thomas Dunn, Stranacally Castle Gardens, Tallow
CHANNEL ISLANDS—										
GUERNSEY	Over; good	Over; very good	Under	Average	Under	Under	Over; good	Over; very good	.....	C. Smith & Son, Caledonia Nursery, Guernsey
JERSEY	Under; good	Average; good	Under; good	Under; good	Under; good	Under; good	Over; very good	Over; very good	.....	H. Becker, Casarean Nur- series, St. Saviour's, Jersey
ISLE OF MAN.	Over; good	Average	.....	Over; good	Average	.....	Over; very good	Average; good	.....	James Murphy, Cronkbourne Gardens, Douglas
	Average	Average	Under	Average	Average	.....	Over	Average	.....	James Inglis, The Nunnery, Gardens, Douglas

THE CARNATION.

In reviewing *The American Carnation, and How to Grow It* (see *Gardeners' Chronicle*, July 11, 1903, p. 16), I was particularly struck with the difference between the type of Carnation favoured in America and the best of our English varieties. The author has great faith in the possibilities of the American Carnation. He says, "Its culture is rapidly extending to Europe. Large establishments in the vicinity of London are now forcing it in quantity during the winter months, the flowers being sold at the Covent Garden Flower Market in London. Belgian and German florists are also undertaking its culture on an extensive scale, and many of the sons of German florists now visit the United States to serve apprenticeships in the leading Carnation establishments, returning in a year or two to their native land to engage in the winter culture of the American Carnation. Thus the utility of the American race for winter forcing is being universally recognised, and within the next generation we may expect to see it in cultivation throughout the horticultural world, wherever climatic conditions permit." This is from the American point of view, and probably they think that no Carnations are worth considering in comparison with their own. Evidently form of flower, substance, and arrangement of petals are not thought of any consequence. It is fortunate that a number of the newest and best varieties are illustrated from photographs. Three different photographs are given of a variety producing flowers of the largest size, but with the petals very irregular and deeply toothed; and this is the characteristic of most of them. The author says, "The shell petal so much valued by the English grower seems to be but little liked by the American public, for the reason that in our climate during bright, sunny weather, the moisture evaporates from the edges of the petals, drying them up, and drawing them together toward the centre in a cup-shaped manner, thus producing a sleepy appearance in the flower, which is fatal to its sale." The above remarks may apply to hot, summer weather; but surely in winter the sun cannot be so powerful; and yet it is stated that even in February and March the flowers take on their sleepy "character," and that in April and May they are comparatively valueless. There must be greater difference in climate between England and America than most people are aware of, unless this author is mistaken. I grow thousands of Carnations, including, as is well known, all the best border and show varieties, form, substance, and "shell" petal being specially desiderated; the plants are fully exposed to the sun without shading of any kind during the months of July and August, and even in the hottest seasons I have never noticed any "sleepiness" in them. The American cultivators have the flowers they can grow, and they tell us that "as far as artistic taste is concerned, there is as much to be said in favour of the ragged yet artistic, graceful appearance of the heavily-fringed Carnation as there is in favour of the perfectly formal flower of the English grower." There the matter may rest, and be left to individual tastes. More important are the diseases and pests we have to deal with in England and America, and we may learn something from American cultivators.

BACTERIOSIS.

It is supposed that the bacterial disease (Bacteriosis) was imported from America with the Carnations into English collections; it is a very troublesome disease, and editors of some gardening papers tell their correspondents to deal with it in a drastic manner. By holding a Carnation-leaf to the light the disease can be readily recognised in the form of small dots, which develop rapidly; the leaf becomes greenish-yellow, and ultimately dies off. The more recent observations made of this disease in America have led cultivators to the conclusion that it is caused by the attacks of various insects, "such as red-spider, thrips, and more particularly aphids." As this is supposed to be a very dangerous disease, it would be well if this matter could be set at rest. Amongst the thousands of Carnation-growers in this country, very few of them have any scientific knowledge of diseases, and see their choice plants dying before their eyes, and are quite unable to do anything for them. For instance, this bacterial disease is either caused by insects, as suggested above, or in some other way. If by insects, it is easy enough to keep the plants, when grown under glass, quite free from thrips and green-fly by fumigating. Red-spider is more tenacious of life, but it can be kept off by syringing. I can quite believe that the small dots on the Carnation-leaves are caused by red-spider, and the effects of this pest's persistent attacks is the same as that of Bacteriosis; the lower leaves die off first, followed by the higher ones in succession. The author states that "the various fungi infesting Carnations will not prevail to any extent if the plants are kept in a clean, healthy, growing condition." This is a grave error. If the fungoid disease is caused by insects in the first place, there may be some truth in it. But the most troublesome disease Carnation growers have to deal with is "rust."

CARNATION "RUST."

This is purely a fungoid disease, and attacks plants more freely when they are in vigorous growth, especially such as have been stimulated by artificial manures; and the broad, succulent foliage of Malmaisons is more liable to be attacked than the more slender stiff foliage of the border Carnations. The disease develops between the membranes of the leaves, and as growth progresses a boil or blister is formed, which speedily forces itself through the thin membrane, and the spores are scattered. There is no doubt that the best way to eradicate this disease is by cutting off the diseased parts before the fungus bursts out into active life. The plants should be looked over once a week, and in a small collection a few minutes will suffice.

CARNATION "SPOT,"

under the name of *Septoria Dianthi*, seems also to be prevalent in America; the climatal conditions most conducive to its development are "when a hot dry season is followed by a continuous spell of wet, cold weather, and then again by periods of intense heat." It is very troublesome in this country, and is a source of much anxiety to cultivators of Carnations, who are greatly alarmed when they see their plants badly attacked by this disease. Bordeaux-mixture,

amoniacal solution of carbonate of copper, and other mixtures are recommended for this as well as for rust and other fungoid diseases. I question much if the remedies are not worse than the disease. In the case of "spot," it is little use trying to remove it or arrest its progress by applications of these or any other solutions. The worst of the leaves may be cut off and burned, although I do not think it is infectious, as I have seen a particular variety very badly injured by "spot," whereas another variety in juxtaposition with it had not a leaf injured. Plants badly attacked, if removed to a position near the roof of a dry, airy greenhouse, will recover, and grow out of the disease as the days lengthen in the early spring months.

"FAIRY-RING SPOT."

A more deadly disease than "Spot" is described in *The American Carnation* as "Fairy-ring Spot" (*Heterosporium echinulatum*). It is stated to have been imported from Europe in 1892 or 1893, and that it had been known in England for a quarter of a century. "The spores are brown in colour, and when produced in great numbers with the threads, darken the spots. At this stage the spots possess different shades of colour, according to the number of spores produced. The growth of the fungus from the centre of the spot is centrifugal, and the darker colour is apt to be arranged in concentric lines or rings, representing a miniature fairy-ring."

"STEM ROT."

Another disease, "Stem Rot" (*Rhizoctonia*), is described at length; it is stated to be caused by a fungus, and so fatal is it in its effects that "during some unfavourable seasons it has destroyed almost the entire stock of some growers." It is said to attack the plants in the fields, causing great losses; but is even more destructive when the plants are brought into the houses in August and September. As much as 90 per cent. of some stocks are destroyed by it—an alarming percentage truly. They have arrived at the conclusion that the mycelium of the fungus travels through the soil from one plant to another, and that it seems to remain in the soil as resting spores ready to fasten on the plants as soon as the roots come in contact with the soil. Here would probably be the value of sterilised soil for striking cuttings, and growing on the plants in their early stages. Lime in the soil has been tried, but has not proved a preventive. My own experience with stem-rot in England has been confined to few cases, and in every one of them the cause has been easily traced to layers or growths, taken from one or more, that was forming to throw up a flower stem. In some cases such plants will grow away and do well, but frequently they will die of rot owing to the pithy nature of the stem; there is no fungoid disease, in the first place, but, as is well known, there are species of fungi ever ready to fasten on decayed or decaying vegetable matter, but they will not spread to healthy plants. I fancy the author is altogether wrong in supposing that such a disease as this has been common or even existing in England during the last twenty-five years, causing such wholesale destruction, and spreading so rapidly and fatally as he describes. Jas. Douglas.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS for AUGUST.

TUESDAY, AUG. 2	Scottish Horticultural Association Meeting. Dudley Horticultural Exhibition (3 days).
THURSDAY, AUG. 4	Midland Carnation and Picotee Society's Show in Edgbaston Botanical Gardens, Birmingham (2 days).
SATURDAY, AUG. 6	Crewe Cottage Hospital Horticultural Exhibition.
TUESDAY, AUG. 9	Royal Horticultural Society's Committee, in New Hall, Vincent Square, Westminster. Bishops Stortford Horticultural Society's Show.
WEDNESDAY, AUG. 10	Royal Botanic Society, Anniversary Meeting. Chippenhall Hort. Show.
THURSDAY, AUG. 11	Taunton Deane Horticultural Society's Show.
SATURDAY, AUG. 13	Sheffield Horticultural Show.
TUESDAY, AUG. 16	Exmouth Horticultural Society's Show (2 days).
WEDNESDAY, AUG. 17	Shropshire Horticultural Society's Show at Shrewsbury (2 days).
THURSDAY, AUG. 18	Aberdeen Horticultural Society's Show (3 days).
FRIDAY, AUG. 19	Devon and Exeter Horticultural Society's Show at Exeter.
TUESDAY, AUG. 23	Royal Horticultural Society's Committee Meet in New Hall, Vincent Square. Brighton Horticultural Society's Show (2 days).
WEDNESDAY, AUG. 24	Harpden Horticultural Society's Show.
FRIDAY, AUG. 26	Royal Botanic Society, General Meeting.
WEDNESDAY, AUG. 31	Reading Horticultural Society's Show. Bath Floral Fête and Band Committee Exhibition (2 days).

SALE FOR THE WEEK.

FRIDAY, AUGUST 5—Imported and Established Orchids, at Protheroe & Morris's Rooms, at 12.30.—326 cases of Liliun Harrisii, Kentia Seeds, &c., at Protheroe & Morris's Rooms, at 2 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —63'2".

ACTUAL TEMPERATURES:—

LONDON.—July 27 (6 P.M.): Max. 68°; Min. 59°.

July 28.—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden (10 A.M.): Bar., 30.1; Temp., 66°; Weather dull, with bright intervals.

PROVINCES.—July 27 (6 P.M.): Max. 64°, S. Coast of England; Min. 55°, N.E. Coast of England.

The Fruit Crops.

We were all expecting a full crop. Never within recollection was there so splendid a promise so far as bloom is concerned. But promise and fulfilment are not one and the same. Nevertheless, as our records show, the fruit crop as a whole is decidedly good. Our reporters hail from all quarters of the British Isles, from the Orkneys to the Channel Islands, from Kent

to Galway. For the most part they are old and valued friends, who know our requirements, and have rendered us a similar service for many years. We take it then that the reports give as fair a general estimate as is possible, and what does it amount to? Let us take Apples, as from our present point of view the most important crop. From Scotland, out of 52 estimates, more than half report an average crop, 22 indicate a crop above, and only 3 below average. In England, out of a total of 165, the figures show no fewer than 83 above and 71 average, as contrasted with 11 recorded as below average. In Wales, Ireland, and the Channel Islands the proportions are about the same.

So far as Plums are concerned, out of 49 reporters in Scotland, 21 give an average crop, but only 9 over and 19 under. In England, out of 163 records we find 64 marked average, only 12 over, but as many as 87 under. The Plum crop, therefore, is decidedly bad.

SUMMARY.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches.	Apricots.	Small Fruits.	Strawberries.	Nuts.
SCOTLAND.									
Number of Records	(52)	(49)	(49)	(51)	(21)	(21)	(51)	(52)	(9)
Average	27	25	21	35	12	6	15	19	2
Over	22	3	9	7	0	0	34	33	1
Under	3	21	19	9	15	2	0	0	6
ENGLAND.									
Number of Records	(165)	(161)	(163)	(155)	(131)	(123)	(165)	(165)	(117)
Average	71	80	64	76	68	38	56	33	61
Over	85	20	12	18	32	8	105	131	15
Under	11	61	87	61	31	77	4	1	41
WALES.									
Number of Records	(15)	(15)	(15)	(15)	(9)	(7)	(15)	(15)	(9)
Average	7	10	7	9	6	3	5	3	6
Over	8	1	0	1	1	0	10	12	1
Under	0	4	8	5	2	4	0	0	2
IRELAND.									
Number of Records	(16)	(16)	(16)	(16)	(8)	(6)	(16)	(16)	(7)
Average	3	11	5	8	4	2	1	1	5
Over	13	1	5	2	1	0	15	15	0
Under	0	4	6	6	3	4	0	0	2
CHANNEL ISLANDS.									
Number of Records	(4)	(4)	(3)	(4)	(2)	(2)	(4)	(4)	0
Average	1	3	0	2	0	0	0	2	0
Over	2	1	0	1	0	0	4	2	0
Under	1	0	3	1	2	2	0	0	0

Cherries, which were so laden with bloom in Kent (the Cherry county), are rather disappointing. In England, out of 155 returns, 76 were noted as average, 18 as over, and 61 as under.

Small fruits is a composite heading, including Gooseberries, red and white Currants, and Raspberries. The general record is decidedly good.

Looking at the figures recording the Strawberry crop, we find everywhere an excess. In Scotland, out of 52 reporters 19 note an average, 33 record a crop over, and not one is below average. In England, out of 165 reports, 33 are average, no fewer than 131 above average, and only one below.

The general summary given above will furnish further details to those fond of statistical enquiries.

In subsequent issues we shall print some of the remarks obligingly sent us by our correspondents, including information upon the best varieties of Apples for particular districts.

NEPENTHES MASTERSIANA is in flower in the Brussels Botanic Garden. We are authorised to say that any hybridist wishing to experiment with the pollen of this species can obtain pollen on application to M. LOUIS GENTIL, the Curator.

ACOUSTIC PROPERTIES OF THE ROYAL HORTICULTURAL HALL.—In connection with the opening of this Hall on July 22, the following interesting letter has been received by the Architect from Lieut. CHARLES GODFREY:—

21, Lancaster Road, Westbourne Park, W.

July 22, 1904.

DEAR SIR,—I congratulate you on the acoustic properties of your new Hall, opened this morning by the King and Queen in Vincent Square.

I purposely went amongst the audience whilst the Band was playing, and was delighted with the effect produced, although I had only twelve members of my String Band playing.

I imagine it will also be most effective for any vocalists, should concerts be at any time given there, judging from the clearness with which the speakers' voices were heard.

It is one of the nicest halls I have ever played in.

Yours faithfully,

(Signed) Lieut. CHARLES GODFREY,
M.V.O., R.A.M., R.C.M., G.S.M.

A NEW EDITION OF "BABINGTON."—Students of British botany will prick up their ears at the announcement of a new edition of

this favourite British Flora. This ninth edition has been confided to the care of two careful and conscientious botanists, Messrs. HENRY and JAMES GROVES; and the publishers are Messrs. GURNEY & JACKSON, of Paternoster Row.

NEW RASPBERRY.—The new variety of Raspberry, Penwill's Champion, which was recommended an Award of Merit at the Holland House Show, was exhibited by Mr. G. PENWILL, 80, High Street, Totnes.

A GARDENER'S YEAR.—Since the "Year in a Lancashire Garden" of the late H. A. BRIGHT was published in our columns, there has been a host of imitators who have produced books of very unequal degrees of merit, some not to be recognised as gardening books at all, others which do really correspond to their titles. Running through the columns of the *Queen* just now is a series of articles by Mr. RIDER HAGGARD, detailing the author's experiences in such a way as to be really useful as well as readable. No doubt they will be separately published later on, and if so an acceptable addition will be made to the list of real gardening books.

ENTERTAINMENT AT THE ST. MARYLEBONE CEMETERY, EAST FINCHLEY.—On Saturday the 23rd inst., Mr. THOS. BEVAN, the Superintendent of the St. Marylebone Cemetery, East Finchley, entertained Mr. GEO. SCHNEIDER, the President

of the French Horticultural Society, the Secretary, and a number of young Frenchmen and Belgians at present located in this country, and invited a few horticultural friends to meet them. After inspecting Messrs. CUTBUSH & SON'S Carnations in their Finchley nursery, which adjoins the Cemetery, the party partook of tea in the open near Mr. BEVAN'S residence, and then a visit was paid to the Cemetery grounds, which is a veritable pleasure-garden; the series of flower-beds and borders and a large number of the graves are aglow with flowers, which, under Mr. BEVAN'S care, were in excellent condition. Mr. BEVAN said that it was only by means of unremitting attention to watering that the many flowering plants were kept in such charming condition during the hot weather.

WITCHES' BROOMS.—The singular outgrowths on the Silver Fir have long been known to be the result of a fungus, *Æcidium velutinum*; but it has been left to Professor FISCHER, of Berne, to prove that the same fungus in another form grows on Chickweed and allied plants (*Stellaria*, *Cerastium*). Spores from the Silver Fir inoculated on the Chickweed produce the disease, and in like manner the spores from the Chickweed when inserted on the Silver Fir produce the *Æcidium*. A short account of Professor FISCHER'S experiments is given in the last number of the *Journal of the Board of Agriculture*.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

SEEDLING DIANTHUS.—Mr. Lindsay, Kaimies Lodge, Murrayfield, N.B., has at present a series of interesting seedling *Dianthus* in flower. They are the result of a cross between *D. integer* and what is said to be a form of *D. deltoides*, and which Mr. Lindsay knows by the name of "pulchellus." The flowers are pure white with a narrow crimson eye, but the plant in habit of growth and foliage has nothing in common with the maiden pink. The crosses possess the peculiarities of both parents; some of them indeed might be called a larger "pulchellus" with the deeply dentated petals of *D. integer*. The former, it may be said, is a "good doer." A specimen with which Mr. Lindsay favoured me is blooming profusely, and forms a notable addition to the large family of *Dianthus*, while a selection from the new crop now in flower will give another good variety. *D. Burnetii* is also flowering on Mr. Lindsay's rockeries. Of the *D. neglectus* type, I have seen it elsewhere this year thriving very well indeed. *Fettes Mount Mule-Pink* is also splendid. I have never seen it finer than at Kaimies Lodge, which, it need hardly be added, is replete with rare and good plants flowering in great profusion. B.

LEAF-PROPAGATION OF CEROPEGIA SANDERSONI AND C. WOODII.—The accompanying sketch (not reproduced) shows leaves of these two *Ceropegias* that have developed small tubers and roots in the cocoa-nut fibre of a propagating-frame. The leaf-stalk of *C. Sandersoni* has callused, and, not being a tuberous species, will probably throw out more roots and produce a stem from their midst. In the case of *C. Woodii* the leaf-stalk has developed into a small tuber, from which the root has grown, and I expect will in time emit stems, as in adult plants. This power of leaf-propagation probably exists in *C. Barklyi* and other succulent-leaved kinds, which I hope to experiment with. I am endeavouring to collect the various species of this interesting but neglected genus, and shall be glad to correspond with any of your readers having *Ceropegias* to exchange. W. E. Ledger, 5, Wilton Road, Wimbledon. [The bulbs referred to above may be seen on reference to our illustration of *C. Woodii*, first described in *Gardeners' Chronicle*, Nov. 20, 1897, p. 358. *C. Sandersoni* was also illustrated in these pages in 1870, p. 173. Ed.]

PEAS, ETC.—Much is written on crops of Peas and the best sorts to grow. The variety *Gradus* succeeds with us well, and is equal to the seedsmen's description. For the second time it has proved a reliable Pea, although it required fourteen weeks to get into full pod this year, against twelve weeks last year. We have five rows 25 yards long, and it is a boon where quantities of good marrow Peas are in request. I do not know another Pea that is so early and carries such a heavy crop of pods of such large size. Veitch's Earliest Marrow came into use in twelve weeks, and carried a heavy crop of somewhat smaller pods, and has the advantage of a shorter haulm, deeper colour, and excellent flavour. This hill-top, close on the sandstone, and with very porous subsoil, is proving very dry this year for most crops; but fruit is plentiful. Strawberries, Raspberries, Gooseberries, Currants of both sorts, and Pears are abundant. Apples, Apricots, and Plums are moderate crops. J. G. Wilson, Chevet Park Gardens, Wakefield, July 18.

SOUVENIR DE LA MALMAISON CARNATIONS AT BUCHAN HILL, CRAWLEY.—A very fine collection of these is grown in the gardens of P. Saillard, Esq., including all the best varieties in cultivation. The plants are in excellent condition this season, being entirely free from disease. One house contains about 300 splendid plants in 8-inch pots, many of them carrying from twelve to fifteen fully-developed flowers of excellent quality. The plants are dwarf and sturdy, with fine healthy foliage close to the pots. Two houses have been devoted to their growth. The following varieties are grown in large quantities—*Calypso*, *Sir C. Fremantle*, *Princess of Wales*, *Sir Evelyn Wood*, *Churchwarden* (extra fine), *Prime Minister*, *Mercia*, *Lady Grimston*, *Lady Ulrica*, and *Thora*. The vineries at this establishment are quite worth inspection. One house of *Black Hamburg* has just been cleared, and the *Muscathouse* is just now in fine condition. Several hundred perfect bunches are colouring beautifully. The adjoining vinery contains chiefly black varieties—viz., *Madresfield Court*, *Frankenthal*, *Hamburg*, *Black Muscat*, &c., carrying about 500 bunches finely finished, the foliage being particularly clean and healthy. The foregoing is a long range of lean-to houses, well constructed and ventilated, and without doubt is one of the best in the country. The late vinery is a span-roofed house, and not fewer than ten varieties of Grapes are grown—*Alicante*, *Lady Downes*, *Gros Maroc*, *Gros Colmar*, *Mrs. Pince*, &c. The Vines are in perfect health, and laden with fruit from top to bottom. The Vines have been planted about twenty-two years. Mr. Martin has had charge of them eighteen years, so that great credit is due to him and his staff of assistants for the excellent condition they are in at the present time. R. H. H.

TORTWORTH COURT.—Will you kindly rectify a slight mistake on p. 63, probably made by my indistinct writing. It was Mr. Alexander Cramb who was gardener at Tortworth Court when I was there in the sixties, and who was a frequent contributor to the *Gardeners' Chronicle*. R. M., Newbury, July 25, 1904.

MOTORS AND MANURE.—Your correspondent "A. D." (p. 63) has called attention to a most vital matter. No doubt, for the health of London, the fewer horses kept there the better; but fewer horses mean a diminished manure supply for the market gardeners and farmers in the metropolitan area. But London lays the whole world under contribution to supply its daily food. The Cæsars, when Rome was in the zenith of its power, drew their luxuries and necessary food from all the then known world; but the Roman Cæsars had a limited *menu* compared with Londoners of to-day; and now, when we consider how much of the world's fertility is consumed in London, and the sewage treated as a waste product to poison the fish of sea and rivers, the question is—who shall arrest this wasted stream of fertility, and instead of allowing it to pollute the waters, return it to the earth to fertilise the same? The elements of fertility are there; who shall arrest them and apply them to the soil in a manner effective but not offensive? We are waiting for that benefactor. When he

comes on the scene we shall not have cause to regret the loss of horse-manure. R. M., Newbury, July 25, 1904.

ARUNDINARIA SIMONI FLOWERING.—I have heretwo plants growing in pots which flowered last season and ripened a good crop of seed. In due time this was gathered, and placed on a sunny greenhouse shelf for about a fortnight or three weeks. It was then sown in a pan in soil consisting of equal parts peat, loam, leaf-mould, and sand, and placed in a propagating-house, where it germinated in about a fortnight to three weeks. About 30 per cent. or more of the seed grew, and the seedlings were potted off in small pots, and are now nice promising plants. I would say respecting the old plants that one of the two at present shows no sign of vitality, but the other is growing away freely and again showing flower at the points of the shoots. J. L., Maryfield House, Exeter.

THE WEATHER.—We have had our share of a glorious rain, accompanied by much thunder and lightning. The rain of course will do a great amount of good to many crops, especially to Turnips and Mangolds, and I do not think it is yet too late to help Potatoes, which were showing signs of distress. The haulms of the variety *Duke of York* appeared to suffer most. Lime trees put on a sickly yellow appearance and then began a plentiful dropping of leaves. *Ailanthus glandulosa* might with advantage in many cases be substituted for the common Lime. Doubts were beginning to be heard how much longer Apple trees would hold their fruit, as some were already beginning to drop. These rains will, I hope, stop all that, and I am sanguine now they will go on and make a good finish. On my *Yucca gloriosa* there is a splendid spike of inflorescence; the plant together with the spike stands 9 feet high; it is the most gorgeous flower of the kind I ever saw. I believe it is best to take off the side shoots when they come, and grow them on as I have done this one; in this way the flower or panicle comes much stronger than when the shoots are left to flower on the parent plant, i.e., after the centre panicle has been cut out. W. Miller, Berkswell, July 25.

THE ROYAL HORTICULTURAL HALL.

(Continued from p. iv. of Supplement.)

Roof.—The whole of the roof of the Exhibition Hall is of glass, supported by steel principals forming three centre arches spanning the entire width of the Hall, and surmounted by a lantern for ventilation. A portion of the end of the Hall, next Bell Street, consists of a steel and glass screen 61 feet in width.

Glazing. The glazing of the roof and screen end is of rough cast plate glass upon Messrs. Heywood & Co.'s patent system of glazing.

Floors.—The floors are laid with rift-sawn pitch pine blocks on Mr. Duffy's "Acme" system.

Decorating. The walls are pleasingly decorated in ornamental plaster by Mr. J. M. Boekbinder from the architect's designs, and the panelled dados and balustrading are of Oak.

Heating.—The warming of the Exhibition Hall required very serious consideration owing to the large expanse of glass, and the system adopted, after consultation with Messrs. Handcock & Dykes, the advising engineers, provides for warming the roof by means of low-pressure steam pipes carried across the roof principals, and having upwards of 1,000 square feet of radiating surface.

The body of the Hall is warmed by means of fresh air drawn from outside through ducts, and, after being filtered, washed and warmed in heating chambers in the basement, propelled into the Hall by electrically-driven fans. In summer time the fans will deliver cool washed air.

The whole of the heating and ventilating has been executed by Messrs. Kinnell & Co., of Southwark Street, S.E.

Lighting.—The Exhibition Hall and the annexes are lighted by hanging electric arc lamps, and incandescent electric lighting is provided by brackets around the walls.

Basement.—Storage for chairs and other properties is provided in the basement under the Exhibition Hall. The boiler-house and cloak-rooms are situated in the front portion of the basement.

Lecture Room.—Upon the first floor, approached either directly from the street or from the entrance hall by a separate staircase, is a lecture room, 46 feet long by 23½ feet wide, fitted with lantern appliances.

Upon this floor are also three large Committee rooms, available for use as retiring rooms in connection with the Exhibition Hall.

Second Floor.—The whole of the second floor is reserved for the exclusive use of the Society, and is approached from the street by a separate entrance and staircase, in connection with which an electric passenger elevator is provided. Upon this floor are the Library, Council-chamber, Secretary's room, and two offices for clerks.

Library.—The Library, where, in addition to the Society's collection, will be housed the famous Lindley Horticultural Library, is 47 feet long, 23½ feet wide, and 13½ feet high with coved ceiling. Windows are arranged along the upper portions or the side walls, and top lighting is provided in addition. The decorators will be of Oak and ornamental plaster, and the floor of polished Oak. The bookcases and furniture for this room are being supplied by Messrs. Cowtan & Sons, of Oxford Street.

Council-chamber.—The Council-chamber, situated at the Bell Street end of this floor, is 33 feet long, 23½ feet wide, and 13½ feet high. The coved ceiling is of plaster enriched with fruit and flowers in high relief. The walls will be lined with panelled Oak work surmounted by an entablature of moulded and carved Oak, and the floors will be of polished Oak.

Third Floor.—Upon this floor is provided accommodation for the Hall-keeper, and a chamber for the electrical machinery of the elevator.

Generally.—The whole of the administrative portion is lighted by incandescent electric light, gas being also laid on to every floor for heating or lighting. The heating will be by means of low-pressure steam radiators in conjunction with open fireplaces. The joinery upon the upper storeys is of Australian Oak [?], and the floors of pitch-pine blocks. For the door furniture and electroliers use has been made of hammered "Pewtal," a white non-tarnishable metal, supplied by "Art Fittings, Limited." The electrical installation has been carried out by the National Electric Wiring Company, of Victoria Street.

The buildings are protected against lightning upon the method already installed by Mr. Hillingworth Hedges at St. Paul's Cathedral and Westminster Abbey, the whole of the metal work on the roof being connected by conductors, so that should any portion be struck, the electricity will be led to the ground to the patent earths provided.

All parts of the building are connected by means of an interchangeable system of telephones.

NOTICES OF BOOKS.

THE BOOK OF THE CARNATION, by R. P. Brotherston. (John Lane.)

THIS is one of the many useful handbooks on practical gardening edited by Mr. Harry Roberts, and without desiring to make invidious comparisons, we may say it is one of the best. Its comprehensiveness and its thoroughness, having regard to the fact that the whole book contains fewer than one hundred pages, are really remarkable. Mr. Brotherston summarises for the benefit of the gardener what is known concerning the botany, the history, the literature, the cultivation, and the propagation of various species and the varieties of *Dianthus*. The result is the production of a handy little volume, which will appeal to those of varied tastes. The antiquary and the bookworm will appreciate Mr. Brotherston's delvings into the flower-lore of the sixteenth and subsequent centuries, the cultivator will find just the hints he wants to ensure him success in growing these plants, whether under glass or in the open; the florist will see that his exacting requirements are catered for, the physiologist will derive useful information and valuable suggestions from these

pages, and the hybridist may profit from the facts here published. It must be remembered that it is not the ordinary Carnation only that is treated of, but also the Picotee, the Tree-Carnations, the Malmaisons, the Pinks, and Sweet Williams, and the mules or hybrids. At present the self-coloured varieties of Carnation with smooth

practices are happily gradually dying out, and may advantageously be relegated to the manufacturers of artificial flowers.

The Malmaison, in spite of its unwieldy size, is a great favourite. Nevertheless it taxes the skill of anyone not a specialist to grow it satisfactorily. Mr. Brotherston traces the origin of

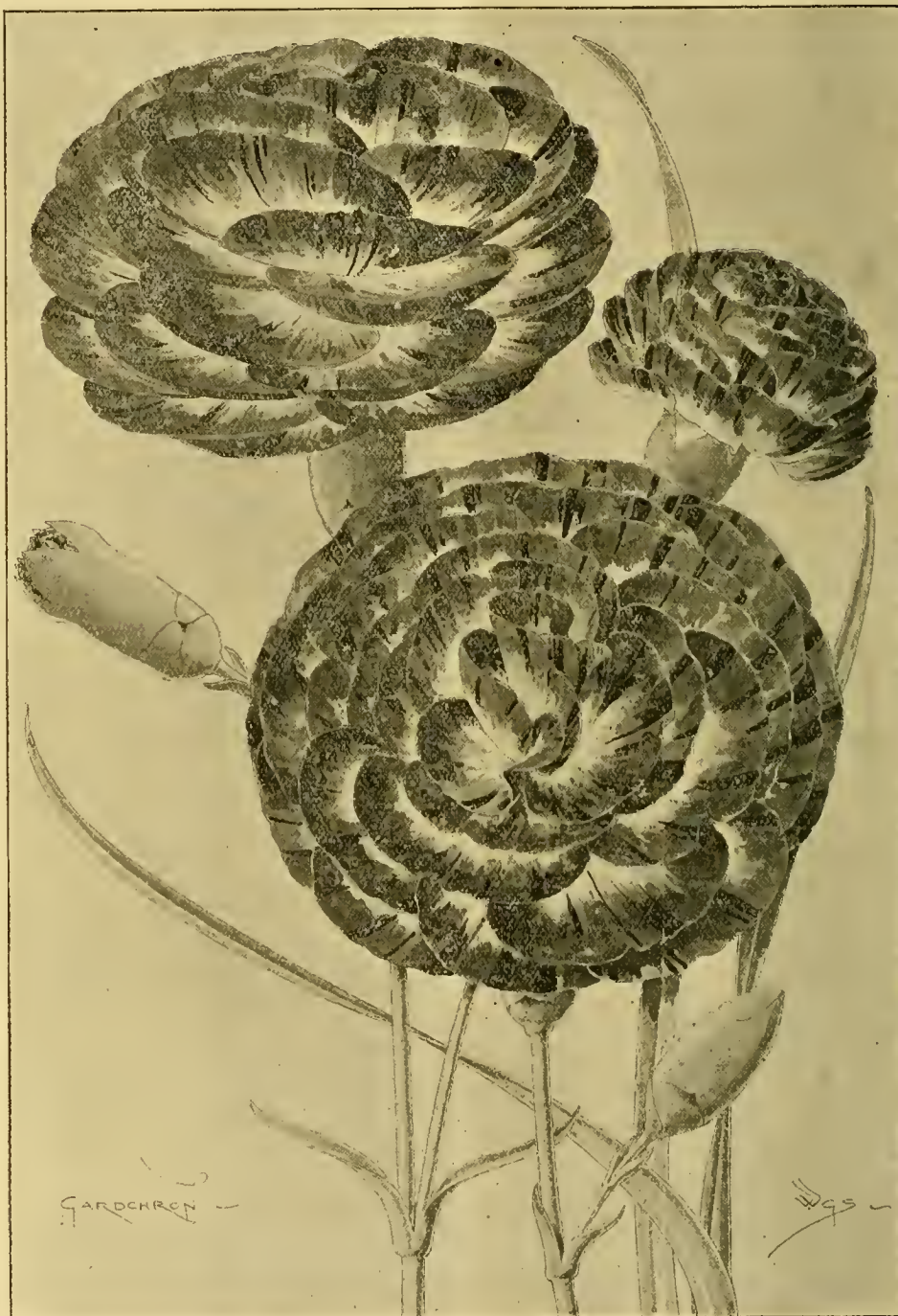


FIG. 35.—CARNATION KING SOLOMON. (SEE P. 79.)
A "fancy" border variety; colours purple, crimson, and yellowish-white.

edges to the petals are most in favour with the generality of people and for market purposes, but the French and the Americans are introducing varieties with fringed petals, such as our forefathers delighted in; whilst the "florists" still revel in their flakes and bizzars, and other forms all beautiful and interesting, but spoiled in the estimation of those who are not of the elect by over-"dressing," and specially by throttling with card-board collars. These

this race to a French raiser, M. Laine, no further back than 1857. This newcomer was the original Souvenir de la Malmaison. Lady Middleton appeared in 1870, and Pink Malmaison in 1875.

"It is," says Mr. Brotherston, "a curious trait in connection with this trio derived from a common stock that the last-named is accounted the easiest to cultivate, and Lady Middleton, the most capricious."

This is another illustration of the fact that the

individuals of a single species may vary very greatly among themselves in their life-functions. Identity, or we may more correctly say apparent identity, in outward characteristics by no means coincides with uniformity of physiological func-

history of the Marguerite section. We are, against our will, obliged to content ourselves with a mere allusion to the sections on the Pinks and on the various hybrid varieties, but we have already said enough to show that those in-

which that source of delight may be attained. The rapidity with which the pollen loses its efficacy is remarkable. The book is illustrated with reproductions from photographs, and has a sufficient index.

Another less pretentious booklet on *Carnations Pinks, and Picotees*, is the work of Mr. E. Hasler Potter (Dawbarn & Ward). It is full of practical suggestions, with numerous appropriate illustrations, well suited to the requirements of the novice. The demands of exhibitors are attended to. The section on diseases and insect-pests requires further expansion in a new edition. The book ends with a series of cultural directions for each month in the year.

TWO NEW CARNATIONS.

At the present time, when Carnations are fully in flower, there is especial interest in new varieties of value. In fig. 35 we illustrate a new border variety, named *King Solomon*, shown by Mr. J. Douglas, of Edenside Nurseries, Great Bookham. It gained an Award of Merit at the Holland House Show. The bases of the petals are almost white, or salmon-white, but higher up are crimson, until at the apex they are purplish-crimson flecked and striped with darker crimson, and having a few intense purple, almost black stripes.

The variety *Lady Linlithgow* is shown at fig. 36. This is also a border variety, and it obtained an Award of Merit at the same exhibition. The flowers have large, smooth petals, non-splitting calyx, and the colour is rich rose, only slightly fragrant. The variety has been raised by Mr. Martin R. Smith, Warren House, Hayes, Kent, to whom we are indebted for the opportunity of illustrating it.

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Morello Cherries are grown in most private gardens on the north side of walls, and trained in a fan-shaped manner. Examine the trees before the fruits become too advanced, and neatly secure in their proper positions the young shoots required for fruiting next season and for filling space, &c. Let the foliage be cleansed, and then apply nets for the protection of the fruits against birds. Do not lay-in the young shoots too thickly, but be careful to preserve a sufficient quantity as near to the main stem as possible, to be trained to take the place of older branches which have become somewhat bare of fruiting wood. The *Morello* produces fruit both on spurs and on young wood, therefore the trees should be kept from bottom to top well furnished with young shoots. If the new growths are too numerous, those not required may be shortened to within a few buds of the base, but not closer than this. Some of the young shoots may be tied to the older wood with wet bast, and others should be made secure temporarily by using short lengths of the prunings, or of Privet twigs; but it is necessary to fasten the leaders with shreds and nails. If the roots of the trees are in need of water, let it be supplied in sufficient quantity thoroughly to soak the soil. If the soil is poor, a little chemical manure or liquid from farmyard manure may be applied.

Budding Fruit-trees.—The budding of fruit-trees is not much practised in private gardens, except for restoring the symmetry of a tree, or for filling bare places on the main branches, but Peaches, Nectarines, Cherries, Plums, &c., may be budded very easily. The work should be done in a similar manner to that practised when budding Roses. Use plump buds, and let the operation be done when the bark will part freely from the stem. The buds will remain practically dormant during the winter, but will grow very strongly in the following spring. Grafting may be done in spring if any buds fail to grow.

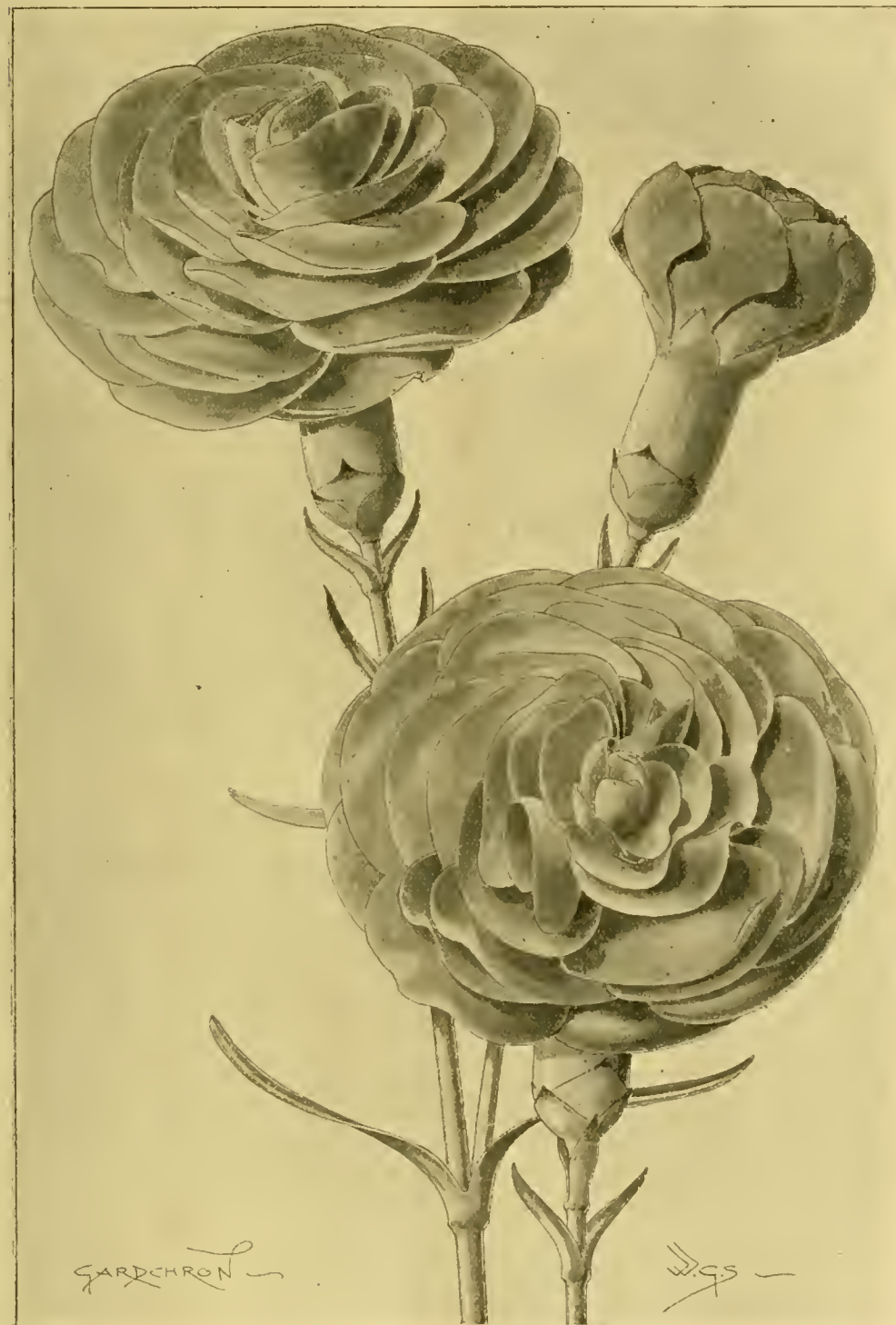


FIG. 36.—CARNATION LADY LINLITHGOW.

Flowers rich rose colour.

tions. Mr. Brotherston points out the necessity of growing on the *Malmaison* varieties from the layers without a cheek, and his recommendations as to cultivation may be read with great profit.

We should have been glad to have seen a little more detail as to the differences in habit and "grass" between the *Malmaison* and other varieties, and a few more particulars as to the

terested in the cultivated forms of the genus *Dianthus* will find both pleasure and profit in reading what Mr. Brotherston has to say about them.

In an appendix, Mr. Martin Smith notes the delight experienced by the cross-breeder when he succeeds in raising "a really good new variety," and goes on to detail the procedures by means of

Gooseberries.—Dessert varieties bearing good crops of fruit for late supplies will need to have their roots supplied with water. If the bushes be shaded during hot weather, the berries will keep fresher and more plump. It will be necessary to protect the fruits from birds, by using fish-netting or other material to cover the bushes. If Gooseberry and Currant-bushes are grown in squares, probably the cheapest and best way of affording protection to flower-buds and fruit is to cover the beds with wire-netting, resting the wire on a strong frame-work. When once this has been done it will last for many years.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Cypripediums.—Such dwarf-growing species as *C. bellatulum*, *C. niveum*, *C. concolor*, *C. Godefroyæ* and its variety *leucochilum*, also the various hybrids obtained from such species, are all general favourites, and a specimen plant of either variety when well flowered is greatly admired. Many cultivators find these species and hybrids more difficult to manage than any other section of the genus, and when once they get into an unhealthy condition it is seldom that they regain their former health and vigour. The present is a good time to examine the plants and to repot those that require it, but repotting should not be done oftener than is really necessary; the roots being very brittle, they are often injured during the process. Previous to repotting, it is advisable to allow each plant to become rather dry. Then the pot in which the plant is growing should be broken gently with a hammer, the stale and loose materials carefully removed, leaving the drainage untouched if surrounded with roots. Place the plant into a larger pot, which should be well drained, and fill up with a compost consisting of good fibrous yellow loam and leaf-soil, freely intermixed with small nodules of broken bricks, chalk, or limestone, covering the surface with a thin layer of sphagnum-moss. There is no need to raise the plants above the rim of the pot, as watering is made more easy if the soil and collar of the plant are just below the rim. Shallow pans are generally advocated, but I prefer pots with holes for suspending them near to the roof-glass. Cultivate the plants in a position in the Cattleya-house where the foliage will be within a foot of the roof, and where the plants will be but thinly shaded at any time. These species, especially *C. niveum*, should be well supplied with water at all times; this applies particularly to plants which may be in a dry atmosphere; but where the atmosphere is naturally moist, less water will suffice while the plants are at rest. The plants should be taken down two or three times every week, and if they are in the least degree dry let them be dipped in a pailful of tepid rain-water, the water just covering the surface of the compost. It is necessary to sponge the foliage occasionally, but care must be taken not to raise the succulent leaves above the level of the pot, or they will crack, and become permanently injured.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Nerines.—These bulbs, having rested since May, will commence to throw up their flower-spikes during next month, and any plants requiring to be repotted should be given attention, in order that the operation may be carried out while they are still dormant. The general practice is to repot these plants as seldom as possible, the idea being that the bulbs flower more freely when the root-room is restricted. So long, therefore, as the plants when treated in this way continue to flower satisfactorily they may well be left alone. Our plants are potted every second or third year, and flower very freely. When, however, bulbs which have made and matured their growth on a shelf in full sunshine in the greenhouse refuse to flower, it may well be surmised that the line between restricted root-room and actual starvation has been passed. In such a case it would be well to shake the whole of the soil from the roots, and repot the bulbs in compara-

tively small pots, placing large single bulbs in pots 5 inches in diameter, and those of smaller size in 3½ or 4-inch pots. Large specimens, composed of clusters of bulbs, may either be divided or repotted entire, using pots of the same size or only slightly larger than they are in at present. Let the pots be thoroughly well drained, and afford a compost consisting of three parts loam and one part leaf-soil, adding plenty of coarse silver sand. The soil need not be watered until the flower-spikes or the foliage appears, when a good watering should be given, and thereafter afforded as often as may be necessary to keep the soil moist. Later, when the plants are in full growth, liberal supplies will be required, especially in the case of those which have not been repotted.

Cyclamen seeds may now be sown in pans filled with a sandy compost. Cover the seeds with about a quarter of an inch of soil, and place the pans in a cold frame. Keep the soil in the pans moist, and afford shade during sunshine.

Cinerarias, Primulas, and Herbaceous Calceolarias.—Further sowings may be made at this time to provide plants for flowering in late spring.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

Onions.—Autumn-grown Onions which were planted out in the spring are now finishing their growth, and should have their necks twisted to stop the upward flow of sap. This will cause the bulbs to plump up and mature better than if the plants be allowed to develop much top-growth, which they would be likely to do if heavy rains should succeed dry weather. Any that may be mature should be "pulled" and exposed to the sun, with their roots towards the air, that the bulbs may get as hard as possible before they are stored. These details are necessary, because if there is the least moisture in the ground on which they lie, and the roots come in contact with the soil, they will commence to grow again. Wattle-hurdles make a good base, or rail-hurdles covered with wire-netting are suitable, as they allow for a circulation of air round the bulbs. Attend to late crops, and encourage them by frequent waterings of liquid-manure. Dig some vacant ground and supply it with manure, in order that it may be ready when the winter varieties have to be sown next month.

Cabbage.—Sowings may now be made of early varieties. On our soil we find none to equal the variety Wheeler's Imperial, if obtained true. It stands through the winter well, and becomes fit for use early in the spring. Seeds should be sown in the first week in August, and the young plants should be put out as soon as they are ready, so that they may get thoroughly established before there is any frost. We very seldom have a plant run to seed, either from August or spring sowings. Earliness depends very much on the aspect of the border on which the plants are placed. We find that those on a border facing south-east, and sheltered from the north-east and west, become fit for use nearly a fortnight earlier than in any other position we have. Clear the ground of early crops, which have been cut over, unless the plants are required to produce "sprouts." Plants from late sowings may yet be planted; they will produce useful little "heads" late in the autumn.

Work in general.—Clear all ground of early crops that are now useless. Wheel manure on to such ground, and dig it up roughly, so that the sun and air may act upon it before the ground is required for another crop. This work is often neglected owing to pressure of other work, and the ground is left to lie until it is required. This may succeed in the case of open, loose soil, but it will not succeed long on heavy, binding soil.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Grape Muscat of Alexandria.—This fine Grape has a tendency to shrivel and become discoloured. The cause of this is sometimes difficult to understand. But such disfiguration will be certain to arise during intense sun-heat, unless the

bunches are well protected by foliage, sufficient care is given to the matter of ventilation, the roots are provided with plenty of water, and the Vines are allowed to make a moderate amount of growth. No shading is used here, but if the present hot weather continues, and the amount of good foliage is not great, it will be well to use tiffany or double fish-netting during the hottest part of the day. Afford liberal ventilation, and an abundance of water at the roots. Give close attention to outside borders. Even under a moderate mulching the soil soon becomes dry if the weather be very hot and windy, and if it does Muscats will be sure to suffer.

Madresfield Court Muscat.—When commencing to colour, the berries are apt to split, but if liberal ventilation be given day and night at that time, if a moderate amount of lateral growth be allowed, and there be plenty of water at the roots from the time the berries are set until they are ripe, "splitting" will give but little trouble.

Straubberries.—Our best supply of runners has been furnished by the young plants planted out last year, but with more than a month of dry weather and scorching sunshine the layers have not made rapid progress. No time should now be lost in transferring them to their fruiting pots, if this has not been done. We usually employ pots of 6 inches diameter. Put 1 inch deep of clean drainage material at the base of each pot, and cover this with moss, and scatter a little soot amongst it. Use the best loam procurable, and make this more or less firm, according to the character of the soil. A moderately dry compost should be used; if wet it will shrink from the sides of the pots after the work is finished. If a heavy soil be rammed too severely water-logged plants will result. Put the plants in a shady situation for a few days after potting and syringe them once or twice each day, then they may be transferred to an open sunny position and be placed on a hard base. When the plants have become well established afford water freely. Remove all runners as they appear. The variety St. Joseph, in 5-inch and 6-inch pots, and possessing strong crowns and pots full of roots, we are now allowing to flower in batches sufficient to keep up the supply of ripe fruits for some considerable time.

SOCIETIES.

ROYAL HORTICULTURAL.

FIRST EXHIBITION IN THE NEW HALL.

JULY 26.—The first exhibition of the Royal Horticultural Society in its new Hall in Vincent Square, Westminster, took place on Tuesday last. In conjunction with this meeting, the annual show of the National Carnation and Picotee Society was held. The exhibition was disappointing, as it suffered from the presence of the Carnations, many of which, being staged on boards, helped but little to give a furnished appearance to the building. On future occasions we hope it will be found possible to arrange the stages in a less formal manner. The effect of the shows would be greatly enhanced if a raised circular stage could be erected in the centre of the Hall in such a manner as to afford relief and contrast to the arrangements in other parts of the building. With the Hall itself visitors expressed themselves delighted; and when there has been sufficient time for the arrangements to be adjusted to the new circumstances, there will be plenty of space, and the full amount of light will enable visitors to inspect the exhibits. As it is, the warmest congratulations are due to the officials for the admirable manner in which, under severe pressure, they have carried out the arrangements.

THE FLORAL COMMITTEE recommended five Awards of Merit, two of these being to varieties of *Gladiolus* and two to varieties of Carnation. The remaining one was to a species of *Gentian*, *G. dahurica*.

THE ORCHID COMMITTEE recommended two First-class Certificates and two Awards of Merit. Among remarkable novelties was *Angraecum infundibulare*.

THE FRUIT AND VEGETABLE COMMITTEE made no award to a novelty, but recommended a "Hogg"

Medal for a remarkable display of Gooseberries made by MESSRS. JAS. VEITCH & SONS, and two other Medals to collections of Pine-apples, Figs, and Peaches.

It may be stated that the Orchid and Fruit Committees sat in one of the annexes on the ground-floor, and the Floral Committee in the other annexe (see fig. 32, p. ii. of Supplement).

In the afternoon a lecture was delivered by Mr. BINGOOD on Orchids, in the Lecture-room upstairs.

One hundred and twenty new Fellows were elected, as against thirty-five at the similar meeting last year.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and MESSRS. C. T. Drury, H. B. May, C. E. Shea, R. C. Notcutt, Jas. Walker, J. F. McLeod, R. Hooper Pearson, R. Wilson Ker, A. Perry, Geo. Gordon, W. Cuthbertson, R. W. Wallace, G. Reuthe, H. J. Jones, W. P. Thomson, E. H. Jenkins, M. J. James, E. T. Cook, Harry Turner, Jas. Hudson, and W. Howe.

MESSRS. W. J. STOKES & SON, Trowbridge, exhibited a perennial *Campanula*, *Hillside Blue*, said to be a hybrid between *C. carpatica* and *C. persicifolia*. The plants were about 2 feet high, and bore purplish-blue flowers, partly resembling those of *C. pyramidalis*, the influence of *C. carpatica* being not so apparent.

MESSRS. WM. BULL & SONS, King's Road, Chelsea, exhibited a group of stove foliage plants, including an excellent plant of *Dracena Victoria*, also *Caladiums*, *Codiaeums*, &c.

MESSRS. J. HILL & SON, Lower Edmonton, London, N., had a large exhibit of Ferns, composed of seventy-five species and varieties, this very representative collection being shown in excellent condition (Silver Flora Medal).

Mr. H. B. MAY, Dyson's Road Nurseries, Upper Edmonton, exhibited a group of Ferns and choice foliage plants. The ferns consisted of very pretty plants of attractive varieties of many genera. Particularly noticeable were *Polypodium Mayii*, several varieties of *Gymnogrammas*, good plants of *Adiantum tenerum Farleyense*, &c. (Silver Banksian Medal).

MESSRS. JAS. VEITCH & SONS, Ltd., Royal Exotic Nurseries, King's Road, Chelsea, exhibited a group of plants in which their effective variety of *Buddleia variabilis*, known as *Veitchiana*, was shown capitally, some of the specimens being 10 feet high. *Astilbe Davidii* also was shown in very large plants, with its purple flower spikes 5 feet to 6 feet high. This new *Astilbe* is an exceedingly effective plant for the flower-garden. A white *Astilbe* growing as high as *A. Davidii*, but having a different mode of inflorescence, was shown; and *Inula racemosa* with large yellow flowers, some of which are produced in axillary racemes. *Buddleia albiflora* resembles *B. variabilis Veitchiana*, except that the flowers are nearly white. MESSRS. JAS. VEITCH & SONS had also a group of plants of their new double *Fuchsia Sylvia*, with white corolla and bright red calyx, described in previous issues. It is the most effective of white double-flowered *Fuchsias* (Silver-gilt Banksian Medal).

MESSRS. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of double and single-flowered *Begonias*, many of the varieties being very pretty, particularly *Lady Cardigan* (single white) and *Lady Londonderry* (double white or faint blush).

HOBBIES, LIMITED, Dereham, Norfolk, made a very large exhibit of cut Roses, arranged in bamboo stands and vases. They soon drooped under the influence of the bright sunshine.

Mr. C. ESCHWEILER, Oudenbosch, Holland (agent for England, Mr. A. HEMSLEY), exhibited *Weigela* (*Diervilla*) *Hortensia nivea*, the centre of the leaves of which is described as being rich golden-yellow colour, but the specimens shown were not in condition.

MESSRS. R. & G. CUTBERT, Southgate Nurseries, Middlesex, exhibited a group of one hundred splendidly grown plants of *Lilium speciosum*, in which the varieties *alba* and *rubra* were represented by plants 4 and 5 feet high, some of which had produced twelve flowers each. We have rarely if ever seen a group of this Lily exhibiting better cultivation (Silver Banksian Medal).

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, exhibited a beautiful group of *Codiaeums*, *Caladiums*, *Cordylines*, *Palms*, and other decorative plants (Bronze Flora Medal).

Mr. JNO. SCOTT, Brooklyn, N.Y., U.S.A., exhibited plants of a dwarf-growing variety of *Nephrolepis exaltata*, and known as "*Scotii*." From its appearance in small and larger pots we think it will prove to be valuable.

CARNATIONS.

Lord SALISBURY, Hatfield House, Hatfield, Herts (gr., Mr. Geo. Norman), exhibited about forty bouquets of Carnations in glasses. These flowers were of fine quality and were nicely arranged. The most striking varieties included H. J. Cuthbush (scarlet), Lady Ridley (white), The Breton (white), Agnes Sorel (crimson) (Silver-gilt Flora Medal).

Mr. A. F. DUTTON, Bexley Heath, Kent, made an exhibit of Carnation flowers in his usual charming fashion. Arranged loosely with very long stems, each bunch was like a beautiful shower bouquet. The varieties *Royalty* (rose-coloured), *Harry Fenn* (deep crimson), *Fair Maid* (salmon-pink), were superb (Silver Flora Medal).

Mr. J. H. GOODACRE, Elvaston Castle Gardens, Derby, exhibited a variety of *Souvenir de la Malmaison* Carnation named *Countess Eva*, but it had little merit.

MESSRS. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, exhibited a collection of Carnation flowers, representing a large number of varieties, but the method of staging and a free use of *Asparagus* resulted in the flowers failing to display themselves to the best.

MESSRS. JAS. VEITCH & SONS, Chelsea, exhibited an extensive group of Carnations in pots. A large number of "tree" and border varieties was included.

Mr. JAS. DOUGLAS, Edenside Nurseries, Great Bookham, showed flowers of new border Carnations, two of which are mentioned under "Awards."

MESSRS. GEO. BOYES & CO., Aylestone Park Nurseries, Leicester, also exhibited a group of Carnation flowers.

MESSRS. T. S. WARE, Ltd. (1902), Feltham, also exhibited Carnations, &c. (Silver Flora Medal).

MESSRS. PHILLIPS & TAYLOR, Lily Hill Nurseries, Bracknell, showed Carnations in pots, also cut blooms. Mrs. W. Charrington (a very good yellow) and *Bomba* (salmon-red) were specially good, and the plants were well furnished with clean healthy growths.

MESSRS. CUTBUSH & SONS, Highgate, made a fine display with Carnations, including border, *Malmaison*, and tree varieties (Silver Banksian Medal).

Mrs. HARCOURT ROSE, Beechlands, Sussex, exhibited a number of seedling varieties of Carnation of good quality, but not better than existing varieties.

HARDY FLOWERS.

MESSRS. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited a group of hardy flowers, in which we noticed *Lilium tigrinum splendens*, *L. Humboldtii*, *L. chalcidionium*, *Delphinium sulphureum*, *Eurothera speciosa*, and other good species.

MESSRS. DORRIS & CO., Rothesay, N.B., and Essex, exhibited a large collection of flowers of varieties of Pansies and Violas which created such a show as one could hardly have expected after the excessively hot weather recently experienced (Silver Flora Medal).

MESSRS. G. GIBSON & CO., Leeming Bar, Bedale, exhibited varieties of herbaceous Phlox and bunches of other hardy flowers.

THE GUILDFORD HARDY PLANT COMPANY, Guildford, in a collection of hardy flowers, included *Lychnis chalcidionia*, *Rhus Cotinus atro-purpurea*, *Yucca filamentosa*, *Acanthus mollis*, and many other species.

P. WATERER, Esq., Fawkham, Kent, made a charming exhibit of varieties of herbaceous Phlox. These were shown in large sprays inserted in glass jars or vases, all of which were covered with delicate green drapery. The quality of the flowers, the drapery, and the arrangement of the colours were alike effective and charming; a large glass epergne was furnished with lilac-coloured and white flowers (Silver-gilt Flora Medal).

Mr. M. PRICHARD, Christchurch Nurseries, Hants, exhibited a collection of hardy flowers, including *Montbretias*, herbaceous Phlox, *Gladioli*, Carnations, *Campanulas*, &c. (Silver-gilt Banksian Medal).

LAURENCE CURRIE, Esq., Minley Manor, Farnborough, Kent (gr., Mr. Profit), exhibited a group of flowers representing *Marillac's* new *Nymphaeas*, and other species arranged in pans with natural foliage. A few Bamboos were placed at the back, and it was a similar exhibit to that from the same gentleman at the Holland House Show (Silver-gilt Flora Medal).

MESSRS. KELWAY & SON, Langport, Somerset, showed *Gladioli* in their usual good style, the large collection including some very fine new varieties. Of these, *Aphrodite* (almost pure white) and *Leader* (creamy-yellow) gained Awards of Merit. Sir Dighton Probyn (a mixture of amber and pink), and King Edward VII. (orange-scarlet), Carlton (a peculiar shade of purple and cerise), and others with flowers of great size may

be noted. For so early in the season one of the finest exhibits we have seen (Silver-gilt Flora Medal).

MESSRS. J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex, exhibited Sweet Peas, Dahlias, and hardy flowers.

MESSRS. WEBB & BRAND, Saffron Walden, exhibited double Hollyhocks in grand style, long spikes of good blooms in a variety of distinct shades of colour—Gaiety (flesh-pink), *Crimson Queen* (crimson), Mrs. Bailey (pale-flesh), *Exullim* (almost black), *Scarlet Gem* (scarlet) *Peri* (creamy-white), and many others, all with flowers of the best quality (Silver Floral Medal).

MESSRS. CARTER & CO., Holborn, showed seedling *Petunias*, single and double varieties. Among the doubles were some very fine fimbriated flowers in various shades; and the singles included some very pretty pink, blue, purple, and the dark-veined varieties.

Mr. AMOS PERRY, Winchmore Hill Nurseries, made a good display with hardy flowers—*Nymphaeas*, *Iris Kämpferi* varieties, *Gentiana septentida*, *Arnebia echioides*, some pretty *Veronicas*, and other choice flowers (Eronze Flora Medal).

MESSRS. JONES & SON, Shrewsbury, had about fifty varieties of Sweet Peas; also some fine vases of Carnations Mrs. Nicholson (pink, beautifully clove-scented) and *Moni* (salmon-rose) (Silver Flora Medal).

AWARDS OF MERIT.

Border Carnation The Old Guard.—An excellent and large flower of rosy-crimson colour, possessing good petals and a non-splitting calyx. Shown by Mr. J. DOUGLAS.

Border Carnation "Daffodil".—This is a pleasing yellow-coloured flower, that possesses an advantage over *Cecilia* on account of the calyx remaining good. Shown by Mr. JAS. DOUGLAS. Neither of the above varieties possess much perfume.

Gladiolus Leader.—A very desirable variety, owing to the pretty tint of the pale yellow flowers. Shown by MESSRS. KELWAY & SONS.

Gladiolus Aphrodite. A fine, bold flower, white, except very little colour in the interior. Shown by MESSRS. KELWAY & SONS.

Gentiana dahurica.—A sub-prostrate species, with growths 8 or 9 inches long. The tube of the flower is whitish inside and out, but the segments are rich blue; flowers rather more than an inch long, and nearly one inch across. Shown by MESSRS. W. CUTBUSH & SONS.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair), Baron Sir H. Schroeder, Jas. O'Brien (Hon. Sec.), de B. Crawshaw, H. J. Chapman, H. A. Tracy, W. H. Young, J. Gurney Fowler, H. Little, W. Boxall, F. J. Thorne, J. Wilson Potter, H. Ballantine, A. A. McBean, F. W. Ashton, J. W. Odell, H. T. Pitt, R. G. Thwaites, N. C. Cookson, F. A. Rehder, J. Charlesworth, J. Colman, H. M. Pollett, W. A. Binley, and J. Douglas.

The various groups contained an unusually large number of rare and curious species, and the very remarkable, large *Angreum infundibulare*, from the Right Hon. Lord ROTHSCHILD'S gardens, was one of the most extraordinary species ever introduced (see Awards).

MESSRS. CHARLESWORTH & CO., Heaton, Bradford, were awarded a Silver-gilt Flora Medal for a very fine group, in the centre of which was a batch of a good type of the blue *Vanda cerulea*; on each side were arrangements of fine forms of *Laelio-Cattleya* × *callistoglossa*, and interspersed *Laelia* × *Digbyano-purpurata*, *L. × Helen*, the pretty reddish-crimson *L. C. × Penelope*, *L. C. × Rudolph aurifera*, *Cattleya × Hardyana*, home-raised; *Masdevallia torta*, *M. calura*, and other *Masdevallias*; the pretty white purple, spotted *Cypripedium* × Mrs. Herbert Druce, and other *Cypripediums*; *Cattleya Gaskelliana alba*, *Celogyne Sanderiana*, *Oncidium macranthum*, and a fine form of *Cattleya* × F. W. Wigan, which secured a First-class Certificate.

MESSRS. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a large and interesting group. Massed together were a number of very curious and pretty species, including *Vanda limbatia*, *Polycyrenis muscifera*, with a spike of curious insect-like flowers, a singular *Bolbophyllum* with a raceme of reddish flowers; *Houlletia Broeklehurstiana*, *Polystachya Leonensis*, the pretty *Pachystoma Thompsoniana*, *Dendrobium Fytchianum*, *Saccolabium retusum*, a large reddish-crimson form of *Mormodes badium*, and other singular species. Among the *Cypripediums* were the very dark-coloured *C. × Lamonteanum*

superbom, *C. glanduliferum*, *C. callosum* Sanderae, &c. Good hybrids noted were *Cattleya* × *Wavriniana*, a very fine and showy flower; *C.* × *Parthenia* Princess, a wax-like white flower with delicate rose markings on the lip; *C.* × *Shakespeare*, *C.* × *Vulcani*, forms of *Laelio-Cattleya* × *blotchleyensis*, *L.-C.* × *Martineti*, *L.-C.* × *Hy. Greenwood*, and other *Laelio-Cattleyas*. Also remarkable were *Catasetum macrocarpum viride* and *Masdevallia Harryana* Sanderae, a good white flower with a slight yellow shade. The variety is nearly an albino of the best type of *M. Harryana*. Messrs. SANDER also showed *Laelio-Cattleya* × *Purple Emperor* (*callistoglossa* × *Warszewiczii* Rothschildiana) with a fine claret-purple labellum which had scarcely developed.

Messrs. HUGH LOW & CO., Enfield, secured a Silver Flora Medal for a good group, in which varieties of *Cattleya* Gaskelliana were well displayed; also *C. bicolor* Grossi, *C.* × *Mary Gratrix*, *Brassavola Digbyana*, *Mormodes pardinum aureum*, &c. A fine feature was a large pan of *Cypripedium* × *gigas* Corn-deani, and under a bell-glass were the very handsome *Cypripedium* × *l'Ansoni* (Morgania × Rothschildiana), *C.* × *Maudiae* and *Phalaenopsis violacea*, *Bollea celestis*, *Dendrobium cruentum*; other good species were also represented.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver Banksian Medal for an interesting group, composed of a selection of *Phalaenopsis amabilis* Rimestadiana, *Odontoglossum crispum*, a fine specimen of *Laelia xanthina*, *Cattleya* × *Mrs. J. W. Whiteley*, *Epiphronitis* × *Veitchii*, *Nanodes Medusa*, *Stanhopea tigrina*, *Cypripedium callosum* Sanderae, *Lycaste leucantha*, *Sophrora-Cattleya* × *Chamberlainiana*, a fine specimen of *Odontoglossum Uro-Skinneri* album (Cultural Commendation), and *Cattleya* × *Thurgoodiana* (Luddemanniana × *Hardyana*), a pretty flower nearest to *C.* × *Hardyana*, but with a light patch on the lip.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed as *Cypripedium* × *Harveyanum* (Stonei × *Leeanum*) a rather pretty hybrid very much resembling *C.* × *Alice* (Stonei × *Spicerianum*); *C.* × *vexillifera*, and the very richly-coloured *Laelia* × *Iona* nigrescens.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), sent *Odontoglossum* × *loochristyense* Theodora, a very distinct variety showing more of the white of a good *O. crispum* than any other form; the flowers were distinctly blotched. Also *O.* × *Crawshayanum* (Hallii × *Harryanum*), *O. Harryanum* rosefieldense, and *O.* × *elegans* var.

E. W. BECKETT, Esq., M.P., Wood Lea, Virginia Water (gr., Mr. Baskett), sent a fine branched inflorescence of the reddish-crimson *Renanthera coccinea*.

W. P. BURKINSHAW, Esq., The West Hill, Hesse, Hull (gr., Mr. Barker), again showed his beautiful *Cattleya Warszewiczii* "White Queen," which had previously taken an Award of Merit; sepals and petals pure white, lip marbled with dark rose.

W. W. MANN, Esq., Bexley, Kent (gr., Mr. J. Simon), showed a fine plant of the typical rose-lipped *Oncidium lanceanum*, and another of a nearly white-lipped form, with two spikes. The plants were splendidly grown.

Mr. A. J. KEELING, Westgate Hill, near Bradford, again showed the yellowish-white *Masdevallia Harryana* alba.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr., Mr. Bound), showed a group of plants, for which a Silver Banksian Medal was awarded. Included were *Cattleya* Mrs. J. W. Whiteley, *C. Patrocinii*, *C. gigas*, *Laelia xanthina* with sixteen flowers, *Stanhopea tigrina*, *Lycaste leucantha*, *Cypripedium callosum* Sanderae, *Epiphronitis Veitchii*, *Sobralia Veitchii*, *Odontoglossum crispum*, &c.

AWARDS.

FIRST-CLASS CERTIFICATE.

Angraecum infundibulare, from the Right Honble. Lord ROTHSCHILD, Tring Park (gr. Mr. A. Dye). A very large and interesting species with broad white front to the lip, which is openly displayed. The basal part is continued into a greenish funnel-shaped spur some 6 inches in length, and is prolonged into a slender tail about 6 inches in length, which forms a tendril-like support for the heavy flower by curving abruptly over one of the adjacent roots. The sepals and petals are greenish, lanceolate, and each over 2 inches in length. The flowers are borne singly on trailing stems bearing bright green, narrowly ovate leaves. The remarkable species seems to have been first made known by dried specimens collected by Barter on Prince's Island, W. Africa (Lindl. in *Journ. Linn. Soc.*, vi. (1862), 136). It has never before flowered under cultivation. The

plants were collected by Major H. B. Rattray on the Victoria Nyanza, Uganda, in 1902, a widely different locality from that of the original record. The Hon. Walter Rothschild received A. Rothschildianum, and others said to be new, from the locality named. A. infundibulare is very fragrant.

Cattleya × *P. W. Wigan superba* (Schilleriana × *Dewiana aurea*) from Messrs. CHARLESWORTH & CO.—A very fine hybrid with the characteristic leaning towards *C. Schilleriana* of all the hybrids of that species. Sepals and petals of a delicate yellowish-cream colour tinged with pale purple. Lip rosy-crimson veined with purplish-crimson, and with a distinct golden-yellow blotch in the centre.

AWARD OF MERIT.

Cattleya × *Patrocinii*, Tring Park variety (*Cattleya Leopoldii* × *Loddigesii*, fine var.), from the Right Hon. Lord ROTHSCHILD (gr., Mr. A. Dye).—Five plants of a batch raised at Tring Park by the Hon. WALTER ROTHSCHILD were shown. Two were of indifferent merit, two similar to the best form of *C.* × *Patrocinii*, originally imported as a natural hybrid, and one, the Tring Park variety, by far the most beautiful of its class. Sepals and petals broad, purplish with bright dark-purple spots. Lip white at the base, rose on front and side-lobes.

Odontoglossum Uro-Skinneri splendens, from J. WILSON POTTER, Esq., Elmswood, Croydon (gr., Mr. Young).—A very handsome variety, with broad honey-yellow sepals and petals marked with chestnut-brown, and fine labellum entirely covered with bright dark-rose-coloured spotting.

Fruit and Vegetable Committee.

Geo. Bunyard, Esq. (chairman), and Messrs. H. Balderston, J. McIndoe, S. Mertimer, A. Dean, G. Kelf, H. Parr, H. Markham, J. H. Goodacre, F. Q. Lane, J. Jaques, Geo. Wythes, G. Norman, J. H. Veitch, A. H. Pearson, Owen Thomas, and R. Lewis Castle.

Magnificent Figs and Peaches were shown from the gardens of Lord SALISBURY (gr. Mr. G. Norman), Hatfield, Herts. There were about four dozen fruits of the variety of Fig Brown Turkey, of very large size and well coloured. Two dozen fruits of Royal George Peach were equally good. From the same garden were exhibited three good fruits of Melon Hatfield Favourite, a yellow fruit of moderate size and good flavour (Silver Knightian Medal).

From the garden of H. L. BISCHOFFSHEIM, Esq., Warren House, Stanmore, were exhibited twenty-two Pine-apple fruits, for which a Silver Knightian Medal was recommended.

Seedling varieties of Melons were shown by F. A. BEVAN, Esq., Trent Park, Barnet (gr., Mr. H. Parr); Rt. Hon. J. CHAMBERLAIN, Highbury, Birmingham (gr., Mr. J. Deacon); and Captain Holford, Westouirbirt (gr., Mr. Chapman); but no awards were recommended.

Mr. G. PENWILL, 80, High Street, Totnes, again exhibited "Penwill's Champion" Raspberry, which gained an Award of Merit at the Holland House show.

Yates' "Purple Pod" Pea was shown by Mr. H. YATES, Sutton, Hounslow. This variety has rich purple-coloured pods of larger size than purple ones are usually.

Messrs. T. RIVERS & SON, Sawbridgeworth, exhibited fruits of their fine new early-fruited Peach Duke of York, which has already been awarded an Award of Merit.

Mr. WILL TAYLER, nurseryman, Hampton, exhibited fruits of the Peach Libra, which has also received an Award of Merit from the Society.

Mr. W. DEAL, Jun., Kelvedon, Essex, exhibited pods of a new Pea, Brookland's Prize, described as a heavy cropping second-early variety.

Cucumber "Progress" was shown by Lord BELPER, Kingston Hall, Derby (gr., Mr. Cooke). The fruits were of large size, fair shape, and good colour.

Messrs. H. E. & W. LACK, Sheep Street, Wellingborough, exhibited Lack's Monster Red Currant, and two varieties of Gooseberries.

Messrs. T. SPOONER & SONS, Hounslow Nurseries, Middlesex, exhibited fruits of Mr. Gladstone, Early Red Margaret, July Queen, Beauty of Bath, and Red Astrachan Apples; also Morello Cherries. These early varieties of Apples are already ripe, especially Early Red Margaret.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a magnificent collection of Gooseberries. The fruits were arranged in baskets, and represented as many as eighty-seven varieties. These were backed by fifty cordon-trained plants in pots. These had been cut from the open

ground, were from 3 to 5 feet in height, and were literally wreathed with ripe berries. All the best dessert and culinary varieties were included in the collection of fruits, amongst which were the new varieties Langley Gage (white), Langley Beauty (pale yellow), and Golden Gem, all of which have good flavour, particularly Langley Gage, which is exceedingly rich and sweet (Hogg Medal).

Messrs. SUTTON & SONS exhibited several fruit-bearing plants of *Solanum guatemalense*. The fruits are juicy, with a flavour of Melon. A figure will be found at p. 160 of our number for March 7, 1903.

Lecture on Orchids.

The 3 o'clock lecture was delivered by Mr. BIDGOOD in the room to be devoted to that purpose on the first floor. In spite of the great heat, the accommodation was infinitely superior to that afforded by the Drill Hall, and no doubt the comfort and convenience of lecturer and audience will now be more considered than was possible under the old arrangements. The lecture consisted in the explanation of a very large series of coloured photographs representing many genera of Orchids and their hybrids, which were thrown on the screen. The large size of the representations and the interesting remarks of the lecturer rendered this a very delightful lecture. Considerable stress was laid on the pigments, which were in many cases double, thus a red overlying a yellow pigment produced the chocolate spotting so remarkable in some forms of *Odontoglossum crispum*. Some of the pigments are liquid, others solid. The effect of hybridisation on the distribution of colour was also pointed out, and some of the variations were shown to be consistent with Mendelian principles. Mr. GURNEY FOWLER, who presided, proposed a vote of thanks to Mr. BIDGOOD, which, it is hardly necessary to say, was carried by acclamation.

NATIONAL CARNATION AND PICOTEE.

JULY 26.—A very good show indeed, was the general opinion of experts. Though the white-ground Carnations and Picotees were somewhat sparingly shown, they were bright in colour, some of the scarlet bizarres being of fine quality. The selfs, yellow-ground, and white-ground fancies, and the chaste yellow-ground Picotees, were particularly fine, and numerous shown, especially in the amateur classes. The light in the new Hall showed off the flowers to the best advantage, but the wide tables sadly needed some plants down the centre to relieve their nakedness of appearance. Should the Society hold its exhibition in the Hall again, tables 4½ feet in width would be better than those 6 feet in width. The arrangements of the Carnation show left a good deal to be desired.

Bizarre and Flaked Carnations.—Three collections of twenty-four blooms competed. Mr. F. A. WELLESLEY was placed 1st, having in the order of the blooms as read from left to right, C.B. Master Fred, P.F. Gordon Lewis, P.P.B. William Skirving, S.F. Mrs. J. J. Keen, P.F. Geo. Melville, C.B. Master Fred, R.F. Pandora, S.B. Robert Houlgrave, R.F. Thalia, S.F. Guardsman, S.B. George, P.F. Geo. Melville, P.P.B. W. Skirving, S.B. J. Beswick, S.F. Sportsman, P.F. Gordon Lewis, S.B. Robert Houlgrave, C.B. J. D. Hextall, R.F. Merton, C.B. J. S. Hedderly, S.B. Admiral Curzon, P.F. Chas. Henwood, C.B. J. W. Bentley, C.B. J. S. Hedderly. 2nd, Mr. MARTIN R. SMITH, Hayes (gr., C. Blick), who had some pure and highly refined flowers, and experts were heard saying the position of these two stands should have been reversed. Some of his chief blooms were S.F. Harwood (brilliant in colour), P.P.B. Chloe, P.F. Sweet Nell, P.P.B. Melford, R. F. Mia Cara, C.B. Lord Nelson, P.P.B. Romola, R.F. Latnam, P.P.B. Inca, S.B. Phryne, P.P.B. Lilith, S.F. Damio, &c.; 3rd, Mr. C. TURNER, Slough.

Self Carnations.—These were brilliant and striking. Mr. F. A. WELLESLEY being once more placed 1st with twenty-four blooms—Sir Bevis, Agnes Sorel, and Gil Pole: crimson and scarlet, Etna, Comet, and H. J. Cutbush; rose, John Pope and Ophelia; pink, Pink Pearl, Ivo Sebright, and Mrs. F. W. Flight; terra cotta, Benbow; yellow, Almoner, Mrs. Charrington, and Germania; white, Much the Miller, Gloriosa, and Wild Swan; purple, Mrs. Mestyn, some of the foregoing being in duplicate. Mr. M. R. SMITH came 2nd, also with some finely-finished blooms, having of maroon shades, Ebbie, Grand Vizier, and Karo; scarlet and crimson, Etna and Comet; rose, Rosamond, Anna Boleyn, Bridegroom, and Floradara; pink, Mrs. Guy Sebright; white, Hildegard and Much the Miller; yellow, Cecilia and Daffodil. 3rd, Messrs. BLACKMORE & LANGDON, Twerton, Bath.

Fancy Carnations.—These were also of superb development. With twenty-four blooms Mr. M. R. SMITH was placed 1st, having insignificant blooms of Admiral, Mrs. A. Torrens, Infanta, Hesperus, Paladin, Thos. A. W. Jones, Mountjoy, Merlin, Cavalier, June, Royal George, C. Martel, Molly Maguire, The Seer, Amphion, and Hidalgo, some being in duplicate. 2nd, Mr. F. A. WELLESLEY, who had in very fine character Persens, Bredick, Professor Cooper, Hidalgo, Monarch,

Argosy, Falcon, C. Martel, Miss L. Webb, Mrs. F. A. Wellesley, Horsa, and Galileo. 3rd, Messrs. BLACKMORE & LANGDON.

Picotees, white ground.—Mr. M. R. SMITH took the 1st prize with a collection of refined blooms, having H.P.E. Amy Robsart, H.Ro. Little Phil, L.P.E. Lavinia, H.Ro.E. Blink Bonny, L.R.E. Mrs. Gorton, H.Ro.E. Mrs. Sharp, H.Ro.E. Kenneth, L.Ro.E. Fortrose, H.P.E. Miriam, H.Ro.E. Duchess of York, H.Ro.E. Lady Louisa, H.Ro.E. Clio, L.P.E. Pride of Leyton, H.Ro.E. Dainty Lady, L.P.E. Somerhill; some of the foregoing being in duplicate. 2nd, Mr. F. A. WELLESLEY, who had in fine character H.Scar.E. W. H. Johnson, H.Ro.E. Little Phil, H.Ro.E. Lady Louisa, L.R.E. Mrs. Barron, H.R.E. Ganymede, L.P.E. Somerhill, L.Ro.E. Nellie, H.Ro.E. Mrs. Payne. 3rd, Mr. C. TURNER.

Yellow Grounds.—In this class magnificent blooms were staged by Mr. M. R. SMITH, who was placed 1st with Leonora, Verena, Espoir, Astarte, Chryseis, Iscult, Earl Erik, Peri, Ida, Lucy Glitters, Dalkeith, Mrs. W. Heriot, Countess, Star, and Kohinoor, duplicates making up the number. Mr. F. A. WELLESLEY came 2nd, also with fine blooms, having Countess Verulam, Daniel Defoe, Gronow, Lady St. Oswald, Hesperus, Gertrude, Mrs. W. Heriot, Lauzan, Mrs. Durrant, Othello, &c. 3rd, Mr. C. TURNER.

With six self Carnations, one variety, Mr. M. R. SMITH was 1st with Daffodil, the finest yellow self yet raised; Mr. F. A. WELLESLEY, 2nd, with Germania; Mr. C. TURNER, 3rd, with Sir Bevy.

With six blooms of a yellow ground, fancy, Mr. M. R. SMITH was 1st with King Solomon (red and maroon on a yellow ground), very fine (fig. 35). Mr. F. A. WELLESLEY came 2nd with Westfield Seedling (cream, heavily edged with crimson maroon). Messrs. BLACKMORE & LANGDON were 3rd with Richness.

With six blooms of a fancy Carnation, Mr. M. R. SMITH was 1st with Algot, flamed with rosy-red on white. Mr. F. A. WELLESLEY came 2nd with Millie. Mr. SMITH was also 1st with six blooms of a yellow-ground Picotee, having Mrs. W. Heriot, having a wide edge of rose on a deep yellow ground—a perfect flower as shown. Mr. WELLESLEY came 2nd with the same; and Mr. C. TURNER, 3rd, with Artisan.

With twelve distinct varieties of selfs, fancies, or yellow-grounds, three blooms of each, undressed, Mr. M. R. SMITH was 1st; and Messrs. BLACKMORE & LANGDON, 2nd.

Carnations, Single Blooms.—S.B.'s: Robert Houlgrave, from Mr. R. SYDENHAM, came 1st; Mr. W. SPENCER, Junr., was 2nd and 3rd with the same. C.B.'s: J. S. Hedderley, from Mr. W. SPENCER, was 1st; Mr. WELLESLEY came 2nd and 3rd with Master Fred. P.P.B.'s: William Skirving was placed 1st and 2nd from Mr. WELLESLEY; Mr. J. FAIRLIE came 3rd with J. S. Hedderley. P.F.'s: Gordon Lewis was 1st and 2nd from Mr. WELLESLEY; and also 3rd from Mr. R. SYDENHAM. S.F.'s: a bright flower named J. J. Keen was 1st, but with no exhibitor's name; Guardsman was 2nd, from Mr. A. R. BROWN; and Sportsman was 3rd. R.F.'s: Mr. W. SPENCER came 1st with Thalia; Mrs. Rowan was 2nd, from Mr. J. MITCHELL; and Mrs. Lord 3rd, from Mr. R. SYDENHAM. Self White: Mrs. Eric Hambro, from Messrs. PEMBERTON & SON, was 1st; Mr. R. C. CARTWRIGHT came 2nd; and Mr. E. CHARRINGTON, 3rd, both with Much-the-Miller. Scarlet: 1st, Mrs. L. E. Best (brilliant scarlet, fine in the petal), from Mrs. BEST; 2nd, the same; Mr. A. R. BROWN coming 3rd with Carabas (quite scarlet). Rose: 1st, Mr. E. CHARRINGTON, with Carabas (bright rose); Mr. WELLESLEY was 2nd with Mrs. E. W. FLIGHT; and Mr. CARTWRIGHT, 3rd, with Mrs. Guy Sebright. Maroon: 1st, Mr. R. SYDENHAM, with Edward Curtis; Mr. CARTWRIGHT, 2nd, with Sir Bevy; and Mr. W. PARTON, 3rd, with Ralph. Yellow: 1st and 2nd, Mr. W. SPENCER, with Mrs. M. V. Charrington; Messrs. PHILLIPS & TAYLOR came 2nd with the same. Buff: Mr. CARTWRIGHT, 1st with Mrs. R. C. Cartwright (a peculiar shade of orange-apricot); and he was 2nd with the same; Mr. R. SYDENHAM was 3rd. Yellow ground: 1st, Mr. CARTWRIGHT, with Argosy; 2nd, Mr. WELLESLEY, with Mrs. F. A. Wellesley; and Mr. SPENCER, 3rd, with J. A. Rowberry. Other fancies: 1st and 2nd, Mr. M. R. SMITH, with Millie; 3rd, Messrs. PEMBERTON & SON, with Voltaire.

Picotees, Single Blooms. H.E. red: 1st, Mr. A. R. BROWN, with Brunette; 2nd, Mr. J. J. KEEN, with Ganymede; 3rd, Mr. BROWN, with Isabel Lakin. L.E. red: 1st and 2nd, Thos. William, from Mr. CARTWRIGHT; 3rd, the same, from Messrs. PEMBERTON & SON. H.E.P. Amy Robsart was 1st and 2nd, both from Mr. SMITH; Mr. R. SYDENHAM came 3rd with Beau Nash. L.E. purple: 1st and 2nd, Mrs. Farquhar, from Mr. W. SPENCER. H.E. rose: 1st, Mr. SMITH, with Little Phil; Mr. CARTWRIGHT 2nd with the same; Mr. R. BROWN 3rd with Lady Louisa. L.E. rose: 1st, Mr. CARTWRIGHT, with Fortrose; 2nd, Mr. WELLESLEY, with the same. H.E.Y.G.: 1st, Mr. SMITH, with Mr. Walter Heriot; 2nd, Mr. BEADLES, with Gertrude; and 3rd, Mr. SMITH, with Verena. L.E.Y.G.: 1st, Mr. CARTWRIGHT, with

Childe Harold; 2nd, Mr. H. MATHIAS, with Pilgrim; and 3rd, Mr. BEADLE, with the same.

Premier Blooms.—Bizarre: C.B. Master Fred, Mr. F. A. WELLESLEY. Flake: P.F. Gordon Lewis, also from Mr. WELLESLEY. Self, John Pope, bright rose, from Messrs. BLACKMORE & LANGDON. Fancy: Voltaire, from Mr. PARTON; H.E.W.G. Pic. P.E. Amy Robsart, from Mr. R. SMITH. L.E.W.G. Pic. Pride of Leyton, P.E., from Mr. CARTWRIGHT. H.E.W.G. Verena, from Mr. SMITH. L.E.Y.G. Mrs. W. Heriot, from Mr. WELLESLEY.

In the 2nd division of the schedule, the twelve best Carnations, bizarres and flakes, came from Messrs. W. PEMBERTON & SON; Mr. W. SPENCER being 2nd. Mr. A. R. BROWN was 1st with twelve self Carnations; and Mr. W. SPENCER, 2nd. With twelve fancies, Mr. W. SPENCER was 1st with twelve superb blooms; and Messrs. PHILLIPS & TAYLOR, 2nd.

With twelve white-ground Picotees, Messrs. W. PEMBERTON & SON were 1st; and Mr. A. R. BROWN, 2nd. With twelve yellow-ground Picotees, Mr. SPENCER was again 1st with highly-developed blooms; and Mr. A. R. BROWN, 2nd.

The best six self Carnations of one variety were those of Mrs. M. V. CHARRINGTON; Mr. A. R. BROWN coming 2nd with John Pope. The best six blooms of any yellow-ground fancy Carnation were those of Monarch, from Mr. E. NASH; Mr. BROWN coming 2nd with Voltaire.

The best six blooms of a fancy Carnation were those of Orion, from Mr. H. MATHIAS; Messrs. PHILLIPS & TAYLOR winning 2nd with Ivo Sebright.

The 1st prize stand of six blooms of any one variety of Y.G. Picotee came from Mr. H. MATHIAS, who had an unnamed flower; Mr. SPENCER coming 2nd with Gronow.

The blooms in the foregoing classes were all shown on ordinary stands, the varieties the same in the main as those shown in the larger classes.

The best six varieties of selfs, fancies, or yellow-grounds, undressed, three blooms of each, shown in bottles, came from Mr. W. SPENCER. Mr. A. R. BROWN, 2nd.

DIVISION III.

The number of blooms in Classes 25 to 33 inclusive did not rise above six, but the competition was very keen generally, and some very good blooms were staged. The principal prizewinners were Messrs. R. C. CARTWRIGHT, W. H. PARTON, J. FAIRLIE, and W. BEADLE, Mr. CARTWRIGHT being particularly successful. There was also a class for three varieties of undressed blooms shown in threes.

DIVISION IV.

comprised a number of small classes (35 to 43 inclusive), in which the competition was good; and there was a class for six blooms for maiden growers also.

CERTIFICATED VARIETIES.

Seedlings.—A large number was staged, and Certificates of Merit were awarded to the following:—Duke of Norfolk, a bright scarlet self, brilliant in colour and perfect in petal, extra fine; and Bridegroom, bright rosy-pink self, a superb flower of the finest quality, both from Mr. JAMES DOUGLAS; to Mrs. M. V. Charrington, a highly refined yellow self, distributed by Messrs. PHILLIPS & TAYLOR; to Mrs. L. E. Best, a brilliant carmine-scarlet self, intense in tint, and having fine quality of petal, from Mrs. BEST; and to Carabas, a very fine rose self, stout in substance and excellent in petal; and to Mrs. R. C. Cartwright, a distinct, attractive, and refined apricot self, both from Mr. R. C. CARTWRIGHT.

Plants in Pots.—A goodly number of these were shown, and if those in the class for twelve specimens and for one specimen had been stood along the centres of the tables between the boxes of blooms, which made a dreary and naked display, the effect of the show would have been considerably heightened. With twelve plants in pots, Mr. M. R. SMITH was 1st, having well-grown and bloomed examples of Blanche Armida (pinkish-rose), Countess Carrington (a lovely blush self), Gronow, Mrs. Kate Hambro, Sir Bevy, Goldy Locks, &c. Mr. A. F. FULLER was 2nd.

The best single specimen was Countess Carrington, from Mr. SMITH; Mr. FULLER being 2nd with an unnamed variety. With a large group Mr. SMITH was again 1st, having plants well-grown and finely-bloomed, chief among them Countess Carrington, Miss Maud Sullivan (delicate pink), Comet, Ellis (maroon-crimson), Orestes, Pagree, Cygnet (creamy-white), &c.; he being the only exhibitor. Mr. A. F. FULLER was the only exhibitor in the class for a smaller group having unnamed specimens.

Decorations with Carnations.—No bouquets were staged in the class for two. There were some pretty vases, Mr. W. SPENCER taking the 1st prize. There were also sprays of Carnations and buttonholes.

Silver Cups.—A Silver Cup was offered in each Division for the exhibitor obtaining the highest aggregate of points. That in Division I. went to Mr. M. R. SMITH, in Division II. to Mr. W. SPENCER; in Division III. to Mr. R. C. CARTWRIGHT; and in Division IV. to Mr. D. WALKER.

SOUTHAMPTON ROYAL HORTICULTURAL.

SOUTHERN COUNTIES CARNATION SHOW.

JULY 22.—As usual this exhibition was held on the Royal Pier, Southampton, but this year under the auspices of the Royal Southampton Horticultural Society, the former special Carnation Society having ceased to exist. The show was on the whole a good one considering the lateness of the Carnation season.

CARNATIONS.

The leading class was that for twelve blooms distinct of flakes and bizarres. Four exhibitors entered, the premier award going to Messrs. W. PEMBERTON & SON, Harden Nurseries, Bloxwich, for clear, well-defined examples of popular sorts. Especially good were George Melville, Thalia, and W. Prescott. Mr. C. Bick, gr. to MARTIN SMITH, Esq., Warren House, Hayes, was 2nd. Mr. HAYWARD MATTHIAS, Thames Ditton, Surrey, 3rd.

For six flowers of a similar type, J. J. SHELTON, Esq., Rosedale, Churchfield, was 1st with 'even flowers. Mr. J. FAIRLIE, Avenue Road, Acton, 2nd.

Fancy varieties.—Nine competed in the class for twelve flowers, distinct. Mr. BICK won the premier award for good examples of Mrs. Annie Towers, Admiral, Merlin, Hidalgo, and Juno. Messrs. PHILLIPS & TAYLOR, Braeknell, Berks, were 2nd; and Messrs. BLACKMORE & LANGDON, Twerton, Bath, 3rd.

For six flowers, distinct, Mr. J. FAIRLIE was 1st.

Selfs.—In the class for twelve flowers, distinct, Messrs. PHILLIPS & TAYLOR won with good examples. Agnes Sorel, Much the Miller, Hillegarde, Bomba, and Sir Bevy were noteworthy. Mr. C. BICK was a good 2nd.

Half-a-dozen varieties were best shown by Mr. J. F. KEEN, Avenue Road, Southampton. Mr. W. NEVILLE, gr. to F. W. FLIGHT, Esq., Cornstiles, Twyford Winchester, 2nd.

Undressed or Border varieties, for which a special class was made, were not plentiful. For twelve distinct, Mr. E. J. WOOTTON, Knowle Lodge, Fair Oak, was the premier prizetaker; Messrs. BLACKMORE & LANGDON, 2nd.

For six varieties distinct, self or fancy varieties, amateurs only, Mr. NEVILLE won with Mrs. F. W. FLIGHT, W. NEVILLE, and a lovely seedling, White Lady; Dr. YEO, Holmforth, Alverstoke, 2nd.

PICOTEES.

For twelve white-ground varieties, Messrs. W. PEMBERTON & SON, won with neat specimens; Mr. HAYWARD MATTHIAS, 2nd.

Mr. J. F. KEEN won the 1st prize for six varieties; Mr. E. H. BECKLAND, Southgate House, Winchester, was 2nd.

Yellow-ground flowers.—For twelve blooms in not fewer than six varieties, Mr. BICK won against four competitors with Queen Mab, Lady Freemantle, Astarte, Sylvia, and Maritana; Mr. WOOTTON, 2nd.

Dinner-tables decorated with Carnations or Picotees made an interesting feature. Five competed. Miss MINNIE SNELLGROVE, Oxford Road, Southampton, won quite easily with an arrangement of pink flowers, pleasingly intermingled with suitable greenery.

Mrs. BLACKMORE had the best stand or vaso of Carnations or Picotees.

Mr. E. WILLS, florist, Above Bar, had the best Carnation bouquet—a really pretty exhibit.

Trade Exhibits were good. Gold Medals were awarded to Messrs. B. Ladhams & Co. for hardy flowers; to Mr. C. W. Broomfield, for Sweet Peas. Silver-gilt Medals to Mr. W. Garton, Roselands, Woolston, for stove and greenhouse plants; to Messrs. Toogood, for Sweet Peas. Silver Medal to Messrs. Jones & Son, Shrewsbury, for Sweet Peas and hardy flowers. Certificate of Merit to Messrs. W. Cutbush & Son, Highgate, for Carnations; and a similar award to Mr. J. Douglas, Edenside Nurseries, Great Bookham, for Carnations in great variety.

TRADE NOTICE.

MACKENZIE & MONCUR, Limited, have acquired the business of Messrs. Mackenzie Brothers, Edinburgh Foundry, Slateford Road, Edinburgh, and have added to their business of hothouse builders, heating, ventilating, and sanitary engineers, that of architectural and general ironfounders. The electric lighting of mansions and public institutions will form a special feature of the business. The foundry is equipped with the latest labour-saving appliances, and is capable of turning out the highest class of castings at moderate rates.

MR. F. J. CROOK, late gardener to Captain M. Aynesley, Hall Court Gardens, has purchased a nursery business at Curdridge, near Botley.

ENQUIRIES.

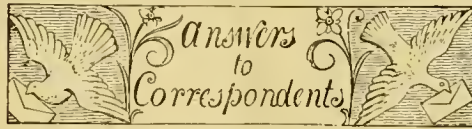
VEGETABLE TUMOURS.—"Do tumours exist in plant-life made of cells of the embryonic type? What is the exact difference between the adult and the embryonic cells as regards the method of cell-division? *L. B. W.*" [The questions here raised are intricate and of such importance that we submitted them to the highest authority on the subject. Prof. Farmer kindly furnishes the following reply:—"So far as is known at present, no growths exist in plants that are exactly comparable with the malignant tumours of animals, except the 'aposporous' growths that occur in Ferns. The correlative productions of 'apogamy' present many points of analogy, but the correspondence is not precise, when the details of the cellular changes are borne in mind. But many local growths, e.g., those produced by some fungi, do resemble the 'benign' tumours of animals in essential features, i.e., they are due to the rapid but strictly localised hypertrophy of the living cells of the tissues affected. There is no difference between 'adult' and 'embryonic' cells in their mode of division, but those adult cells which are thus capable of multiplication either already possess the characters or revert to those of embryonic cells. Your correspondent probably refers to reproductive cells when using the term 'embryonic.' The characters of the divisions of the reproductive cells sooner or later deviate in a remarkable and constant manner from those witnessed in ordinary dividing cells. The nuclei of the latter at each division exhibit a definite number of structures of a rod-like form. These are the so-called 'chromosomes.' The chromosomes of the nuclei pass through very definite series of changes in form during each division, but in the reproductive tissues (e.g., the tissue of an anther that is destined to give rise to pollen-grains) one very easily recognised division is unlike all its predecessors, in that half the number of chromosomes is present, and their shapes are also very different. When once this has taken place all the descendants of such a cell retain the reduced number of chromosomes. Finally from these cells are formed the sexual cells, each of which will unite with a corresponding one of the opposite sex at fertilisation. From this union there results once more a cell with the full number of chromosomes, since each nucleus of the two conjugating cells possessed only the reduced (halved) number of chromosomes as the consequence of the intercalation of the peculiar division already referred to. *J. B. F.*"]

NECTARINE FRUITS SHRIVELLING.—"I would feel obliged if you could assist me in finding out the cause of the skin of Nectarines turning a grey colour and shrivelling just as they are ripening. I enclose three samples of fruit. I have gathered some just before ripening, others have left on tree until ripe, but both fruits turn the same. Two trees in the same house, Rivers' Orange and Pineapple Nectarine, both turn the same, and by the end of the second day are unfit for table. *F. W.*—and *Grower, St. Albans.* [The injury is probably caused by the excessive bright sunshine acting upon exposed fruits. Allow the fruits to be shaded a little by foliage, and take care the roots do not suffer from want of water. *ED.*"]

Obituary.

JOHN BLACKIE.—Many of our readers will regret to hear of the death, on the 16th inst., of Mr. John Blackie, President of the Edinburgh Market Gardeners' Association. Mr. John Blackie, who was in business as a market gardener, was a native of Leith, and belonged to a family who for over a century have been market gardeners in the burgh. He took the greatest interest in the affairs of the Edinburgh Market Gardeners' Association, and had been its president for twenty-five years. The Association numbers 170 members, and some years ago he received from them a handsome presentation of a drawing-room timepiece and ornaments, in recognition of his successful services in connection with the dispute with the Edinburgh Corporation over the rights and privileges of the gardeners in the use of the Waverley Market.

The case was stubbornly fought, and lasted over three years. It was taken by the Corporation to the House of Lords, and there settled in favour of "Blackie and Others" for the market gardeners. The Association was represented at the funeral, and sent a very handsome wreath.



*** * EDITOR AND PUBLISHER.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BURNED PAPER: *N. E.* The ash would be chiefly carbon, with perhaps a little potash. It would do as a dressing for lawns or to lighten heavy soil, but would not be worth paying for.

CROSSING OF BEGONIAS: *H. D.* Remove all the male flowers from the female plant, then take a camel's-hair brush, and with it take the pollen from a male flower of another plant, and transfer the pollen to the stigma of one of the female flowers. It is better to do this before the female flower is fully open, and to remove with a fine pointed pair of scissors one of the flower segments. By applying the pollen in this manner the possibility of fertilising by insect agency is obviated.

GLOXINIA: *H. T.* The appearance of a second corolla as an outgrowth from the first is not unusual. Years ago there was a strain which constantly produced such flowers. You will notice that the position of the purple colour is reversed in the supplementary corolla.

GRAPES: *Palmer's Green.* The disease is due to a fungus *Gloeosporium*, too often mentioned in our columns. You can do nothing now but burn the Grapes. Next season spray the young leaves and flowers with liver-of-sulphur (oz. to 1 gallon of rain-water).

INSECTS ON PALMS AND FERNS: *Palm.* The narrow black insect on the Palm is the "black thread scale," *Ischnaspis filiformis*, and among them are a few examples of the equally injurious *Palm-scale*, *Florinia florinae*. Both species have either been introduced on plants from abroad, or from some locality within the British Isles. Both species are equally hard to kill, and it is only by frequent applications of some kind of insecticide that these insects can be destroyed. No insects were found on the Fern-fronds, but they have the appearance of having been attacked by thrips. *E. N.*

INSECTS ON PEACH AND VINE: *A. S., Cheshunt.* Both species are scale insects. That on the Vine is *Pulvinaria vitis*, and that on the Peach, *Lecanium persicae*. The adult forms of both species are dead, but if you carefully examine the branches you will find the minute, brownish young insects partly hidden under the semi-detached bark of the Vine, and on the undersides of the branches of the Peach. In winter strip the Vines, and give them a dressing of paraffin emulsion or any other insecticide such as is used for mealy-bug. The paraffin emulsion has also been found an effectual remedy for the Peach-scale. *E. N.*

LILIES: *H. Temple.* *Lilium testaceum*, *Alstroemeria Pelegrina*.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. B. C.* *Dendrobium Bensoniae*.—*P. K., Friar.* 1, *Campanula cenisia*; 2, *Sempervivum Boutignyanum*; 3, *Houstonia serpyllifolia*; 4, *Campanula car-*

patica alba; 5, *C. turbinata pallida*; 6, *C. rotundifolia*, pale variety; the species is exceedingly variable.—*W. B.* *Lilium auratum*.—*S. 1.* *Galega officinalis alba*; 2, *Santolina incana*.—*J. H. P.* 1, *Spiraea filipendula*; 2, *Aconitum Napellus* (very poisonous); 3, *Funkia subcordata*; 4, *Sedum reflexum*; 5, *Heracleum sphondylium*; 6, *Ginkgo biloba*.—*J. S., Sligo.* 1, *Astilbe japonica*; 2, *Spiraea Lindleyana*; 3, *Dracocephalum Ruyschianum*; 4, *Veronica Andersoni*; 5, *Potentilla sp.*; 6, *Campanula unifolia*.—*J. G.* Varieties of *Statice sinuata*.—*H. S. S.* *Aërides falcatum*.—*W. C. S.* 1, *Cypripedium oenanthum*, or closely allied garden hybrid; 2, *Catasetum cristatum*.—*G. H. S.* Thanks for 2s. 6d. for the Gardeners' Orphan Fund. 1, *Ligustrum sinense*; 2, *Myrica Gale*; 3, *Deutzia crenata*, double flower; 4, *Spiraea Douglasi*; 6, *Lysimachia clethroides*; 10, *Glaucium luteum*. The others next week.—*J. M. S.* *Oncidium leucocochilum*.—*Steil Tom.* *Trachelium cœruleum*, *Achillea Ptarmica*, double flower.—*W. B. W.* *Clarkia pulchella*, double. We cannot name the Rose; send it to some grower.—*W. R. C.* *Artemisia vulgaris*.—*T. A.* The numbers were disarranged. Send again, and make the numbers more secure.

NOTICE TO QUIT SERVICE: *Anxious to Know.* A month's notice or a month's wages is generally sufficient.

PEACH: *G. H. H.* We cannot name the Peach, which arrived in a smashed condition.

PEACH-LEAVES: *A. W. R.* No disease is present. The injury must have been caused by the sun's rays, unless you have sulphured the hot-water-pipes, or had an exceedingly hot dry atmosphere. Examine the border, and see if it needs water.

PROLIFEROUS ROSES: *R. M. L.* The cause of green-centred Roses is not known. It is probably climatal. Growth should, under ordinary circumstances, stop in the centre of the flower, but for some reason or other it continues.

RASPBERRY-CANES: *P. R.* No fungus or insects. Entomologist says perhaps some insect may have entered the canes below the dead portion, but there is no evidence to show this. It may have resulted from sudden changes of temperature.

RICHARDIA PENTLANDI: *R. S.* This species, like the rest of the *Richardias*, was introduced from South Africa.

TOMATOS: *T. A. T.* The Tomato plants have rotted at the collar. The soil seems very heavy and sodden. Use a more porous soil, and exercise increased care in affording water.

TOMATOS: *J. R. T.* There is no fungus, but imperfect ripening, perhaps from some deficiency of potash in the soil. Mint not found. The disease is probably that known as the Mint-rust, and you had better destroy the stock and plant afresh from a new source.

TARRAGON: *T. H. C.* Not one of the three is the true Tarragon, but what they are we cannot say.

VINE ANTHRACNOSE: *G. P. and A. B. C.* The Grapes are affected with Anthracnose, described and figured in *Gardeners' Chronicle*, July 8, 1893, fig. 10. Nothing can save the Grapes for the season, but the disease must not be allowed to spread to other Vines. Cut away and burn all diseased parts, and syringe with diluted Bordeaux-mixture, so as to kill all germs which may have got dispersed. *M. C. C.*

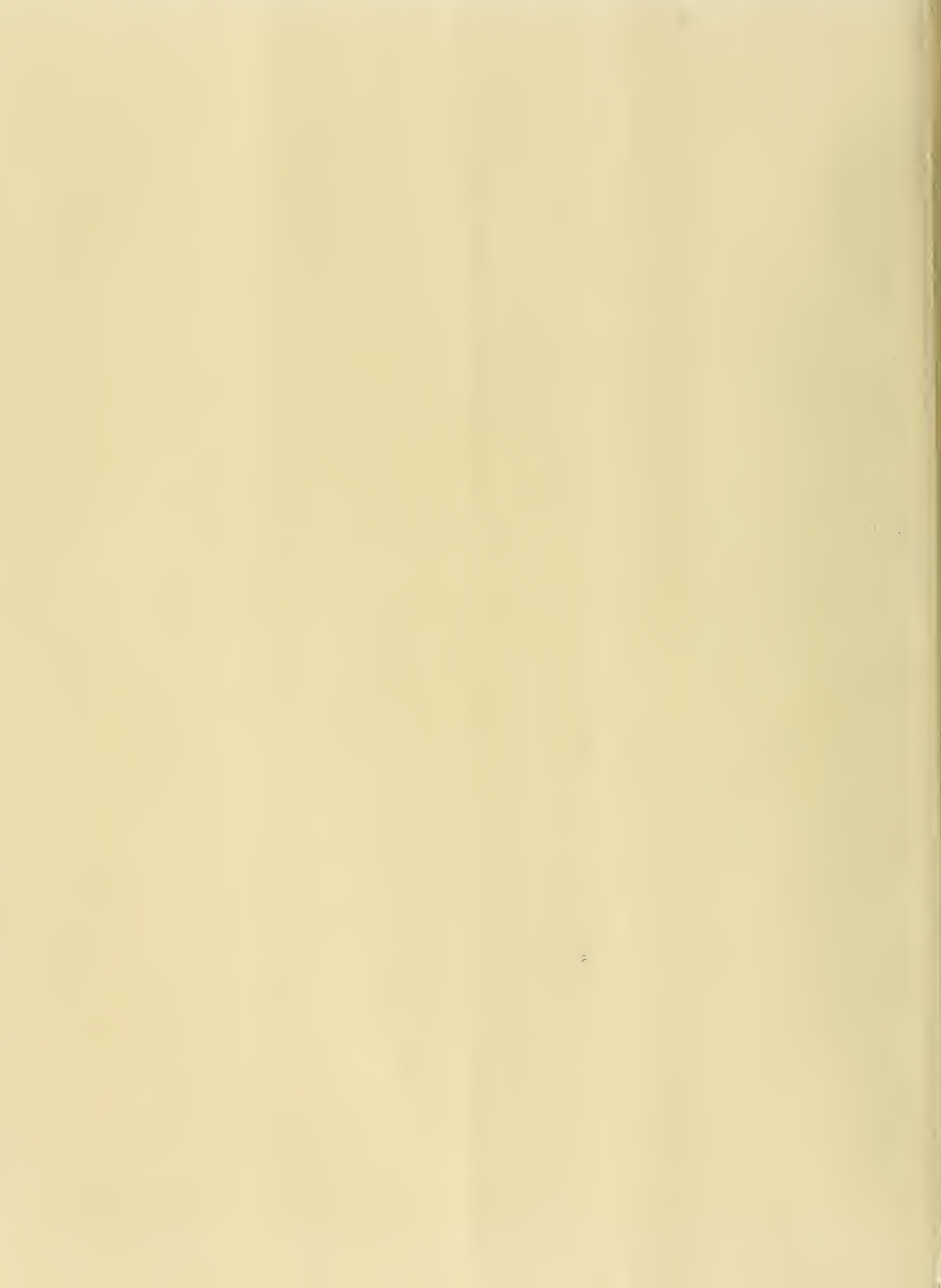
WALLFLOWER AND HONESTY: *W. F. & Co.* The specimen had withered, but probably the trouble is, as suggested, "Finger-and-Toe." Application of gas-lime to the soil may be beneficial, and take care not to plant any cruciferous plant in the same soil for some years.

COMMUNICATIONS RECEIVED.—*W. N., D. D., T. A. S.*—*Sutton & Sons*—*D. W., G. P., G. F. T., E. M., R. D., J. U., T. H., W. W., Pettigrew*—*W. D., H. H., J. L.* and others (fruit forms received too late for inclusion in table)—*F. Moore*—*Expert*—*W. C., J. W., W. H. B., W. M., T. H. S., J. O'B., R. A., R. C. T. D.*—*Rev. H. Friend*—*A. J., A. K. D., W. H., J. M., G. P., W. W., R. W. C.*

(For Markets and Weather, see p. x.)



SIR TREVOR LAWRENCE, BART., K.C.V.O., V.M.H., PRESIDENT OF THE
ROYAL HORTICULTURAL SOCIETY.





THE OPENING OF THE NEW HALL OF THE ROYAL HORTICULTURAL SOCIETY BY H.M. THE KING, ACCOMPANIED BY H.M. THE QUEEN AND H.R.H. THE PRINCESS VICTORIA. SIR TREVOR LAWRENCE, THE PRESIDENT, IS READING THE ADDRESS TO HIS MAJESTY.

[From a photograph by Messrs. Fradelle & Young.]

THE OPENING OF THE ROYAL HORTICULTURAL HALL by THE KING.

FRIDAY, JULY 22, will be a memorable day in the history of the Royal Horticultural Society. The new buildings, which mainly owe their inception to Baron Sir HENRY SCHROEDER, were opened by H.M. the KING, who was accompanied by H.M. the QUEEN and H.R.H. Princess VICTORIA. Half-an-hour after noon the Royal Party arrived, and were received at the entrance by the

menced with the reading of an address by the President, Sir TREVOR LAWRENCE, Bart., V.M.H., as follows:—

TO THE KING'S AND QUEEN'S MOST EXCELLENT MAJESTIES.

MAY IT PLEASE YOUR MAJESTIES,—

We, the President, the Vice-Presidents, the Council, and the Fellows of the Royal Horticultural Society—who now number more than 8,000—venture,

The first [Charter of the Society, granted by H.M. King George the Fourth [Third] in 1809, set out the objects for which the Society had been founded—namely, "The Improvement of Horticulture in all its branches, ornamental as well as useful."

Through the collectors sent out by the Society during the forty years from 1821 to 1861, great numbers of beautiful and useful trees, shrubs, and plants have been introduced into, and acclimatised in, the British



FIG. 31.—VIEW OF THE EXTERIOR OF THE ROYAL HORTICULTURAL HALL.
(From a photograph taken by Messrs. Fradelle & Young on the day of the opening, July 22, 1904.)

President, members of Council, and officials of the Society, who were severally presented. Their Majesties walked in procession to a raised dais erected in the centre of one side of the building. Save for a few Palms at the back of the platform, nothing in the way of decoration was attempted, but the fine proportions, spacious area, and light appearance of the Hall, produced a most favourable impression. The business of the meeting com-

with our loyal duty and greeting, to welcome Your Majesties to our new Hall.

The Centenary of the Society, which was founded in March, 1804, is rendered memorable by the erection of the Building in which we are assembled, and by the acquisition, through the generosity of Sir Thomas Hanbury, K.C.V.O., of a celebrated garden, in place of that at Chiswick, which had become unsuitable for the purposes of the Society owing to the advance of suburban London westward.

Isles. The success attending these expeditions may be realised when the late Mr. Andrew Murray was able to say, with undeniable truth, in his *Book of the Royal Horticultural Society*, "The results" (of the work of the Society's collectors) "have affected the appearance of all England. Nowhere can a day's ride now be taken where the landscape is not beautified by some of the introductions of the Royal Horticultural Society."

Added to this, professional gardeners have been

greatly assisted and encouraged by the help and support of our Society in the elaborate and valuable work of hybridisation and selection, by which new and improved varieties of plants, fruits, and vegetables have been raised in vast numbers.

The Fortnightly Shows of the Society have achieved a widespread celebrity. At them all the more interesting new plants, as well as the more important results of skilled horticultural effort, are first seen and first submitted to the judgment of the most competent experts in the kingdom.

The adherence of the Society to the work of promoting horticulture in all its branches can hardly fail to secure the approbation of the garden-loving race over whom Your Majesty reigns. This is shown by the rapid increase in the number of its Fellows, which has risen from about 1,300 in 1887 to 8,150 now.

highest efficiency the science and art of horticulture. And in thanking your Majesties for your presence here to-day and for the warm interest you have ever shown in the Society, we desire to assure you that the valuable help of the illustrious Prince Consort gave the Society in days of serious difficulty—now some forty-five years ago—has never been forgotten.

The following report of the Building and Appeal Committees, by Mr. J. GURNEY FOWLER, Treasurer of the Society, was then presented to His Majesty by BARON SIR HENRY SCHROEDER, Bart., V.M.H., Chairman of the Appeal Committee:—

MAY IT PLEASE YOUR MAJESTIES,

On behalf of the Building and Appeal Committees, we venture humbly to submit the following report on

of the London Scottish Volunteers, at Buckingham Gate, Westminster, where they have been held up to the present time. They have been ever increasingly popular, and the Society has enjoyed the favour and support of horticulturists, and of the public generally, without interruption.

A few years after the removal of the shows to the Drill Hall, we began to find the accommodation insufficient, the Hall being at times inconveniently crowded, both by exhibitors (who have often not had sufficient space to properly stage their exhibits) and by Fellows of the Society, and others, who have not had proper facilities for seeing and studying the plants shown.

At the same time, the office accommodation at Victoria Street, Westminster, which has always been very limited, has for many years been wholly inadequate for carrying on the increasing general office and routine work of the Society.

Your Majesty, as long ago as 1890, addressed the Fellows in the following words:

"I sincerely hope your labours to obtain a Hall may be successful, for I feel sure it would be of the greatest use and advantage."

Since these encouraging words were spoken, the need for the Hall has increased beyond all expectation, and the project has never been absent from our hopes and our thoughts; and it is this Hall and building, the final result of many long years of hope deferred, but of sustained effort, that your Majesty has graciously consented to declare open to-day.



FIG. 32.—INTERIOR OF THE NEW ROYAL HORTICULTURAL HALL, SHOWING THE TWO ANNEXES WHICH CAN BE USED AS COMMITTEE ROOMS.

(From a photograph by Messrs. Fradelle & Young.)

Every day witnesses advances in many directions, but no art or science has progressed more rapidly during the last fifty years than that of horticulture. The demand for flowers and fruits has grown to such an extent that it has developed a great and valuable industry, and the countenance which Your Majesties have graciously extended to our Society has largely assisted in creating, guiding, and helping this valuable national asset.

We take this opportunity of expressing our enduring obligations to your Majesties for the many and gracious visits you have in years past paid to our Society's shows—visits which have done much to encourage us in our efforts to foster and maintain in the

the erection of the building in which we are honoured by your Majesties' presence to-day.

For very many years the fortnightly and other shows of our Society have been one of the most effective means towards securing the objects we have in view—viz., the diffusion of more correct knowledge of what plants should be grown, and of how they may and should be cultivated.

These fortnightly gatherings were first held at the Society's early home in Regent Street, and for many years afterwards they took place at South Kensington. When, however, in 1887, the gardens there were surrendered to the Royal Commissioners of the 1881 Exhibition, the Society moved their shows to the Drill Hall

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Much difficulty was experienced in finding a suitable site for the building, but we are happy in thinking that our present situation leaves nothing to be desired. Funds had also to be collected, and more than thirteen hundred donations have been received from all classes of the horticultural community and others, amounting in all to £26,000.

£14,000 still remains to be raised before the Society can regard itself as the unfettered possessor of its Hall and building fully equipped.

The main purpose of the building is the holding of our Fortnightly Shows, but other interests have not been lost sight of, and we have reason to believe that the Hall will often be in demand for numerous other

which you allude, and for which you are indebted to the goodness of Sir Thomas Hanbury.

The love of horticulture has increased immensely in this country within the last century, owing in part, no doubt, to the greatly extended facilities enjoyed by our people for visiting rural places; and no science deserves more encouragement than that which tends to promote the study of the art of gardening and to stimulate a taste so wholesome and elevating as the love of trees and flowers.

Our visits to your exhibitions have always given us great satisfaction, and I remember and

fondation. Cet événement séculaire sera plus qu'une fête de famille, plus qu'une solennité nationale. Son éclat rayonne sur le monde entier. Tous ceux qui, dans les deux hémisphères, aiment les plantes, s'uniront en pensée avec vous, pour saluer ces deux grandes dates : 5 Mars, 1804, et 5 Mars, 1904 ! Aucun d'eux ne peut oublier la puissante impulsion donnée par vos fondateurs à la culture des végétaux. Personne ne peut nier la part considérable prise par leurs successeurs au développement constant de ce mouvement horticole dont nous saluons aujourd'hui, émus et charmés, le radieux épanouissement.

Il suffit, en effet, de jeter un instant les yeux sur la longue liste des membres qui honoraient par leurs tra-

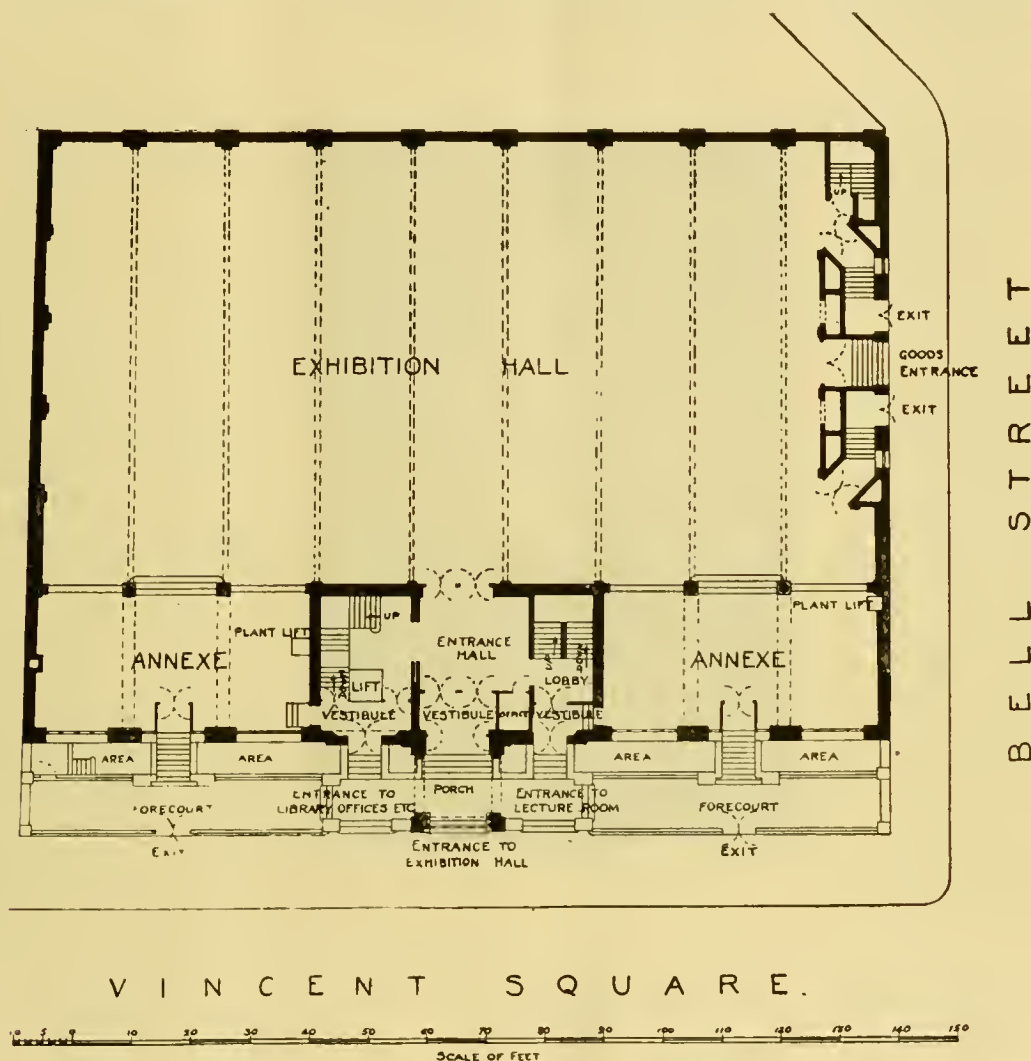


FIG. 33.—GROUND-PLAN OF THE ROYAL HORTICULTURAL HALL.

(Prepared from the Architect's amended design, which includes an entrance porch, &c.)

purposes. In addition to the Hall, we have now ample office accommodation, and a proper home for the Lindley Library, which is of such great use to all students of horticulture.

HIS MAJESTY'S REPLY.

The KING, in reply to the Society's address, said :

"In the name of the Queen and myself I thank you for your loyal and dutiful address. I am very glad that you have at length obtained a suitable Hall for your beautiful and interesting shows, and adequate accommodation for your library and for the performance of the official work of the Society, and it is with great pleasure that the Queen and I are here to-day to declare these new buildings open.

We are pleased also to be able to congratulate the Society on having acquired the garden to

am touched by your allusion to the interest which my dear father took in your Society. The Queen and myself wish that every success may attend the opening of this new hall and its adjoining premises, and that the centenary which we are celebrating this year may prove to be the occasion of an accession of prosperity to the Royal Horticultural Society." (Applause.)

An address from the Société Royale d'Agriculture et de Botanique de Gand was then presented by Dr. MAXWELL MASTERS, F.R.S., Officer of the Order of Leopold, corresponding member of the Institute of France, on behalf of Comte de Kerchove de Denterghem, Président de la Société:—

MONSIEUR LE PRÉSIDENT,—

Le 5 Mars, 1904 [March 7], la Royal Horticultural Society fêtera le centième anniversaire de sa

vaux votre illustre Société pour apprécier combien fut utile au monde civilisé le concours de tant d'intelligence et de si nombreux dévouements. Les théories scientifiques qu'ils ont émises, sont aujourd'hui indiscutées. Les plantes introduites sous vos auspices ornent actuellement nos jardins et nos serres. Un grand nombre de celles-ci se sont si heureusement acclimatées qu'elles sont devenues presque des ornements naturels de nos parcs et de nos parterres. Quel homme, voyant ce que vous avez accompli en l'espace de ce siècle, resterait insensible devant la grandeur, la puissance et la persistance des efforts déployés par la Société Royale d'Horticulture de Londres !

Créée en 1808, la Société Royale d'Horticulture de Gand est de quatre ans votre cadette ; elle a contractée avec sa sœur aînée de Londres, des rapports d'amitiés profonds et durables, depuis le jour où, sur son livre d'or, elle recueillait les signatures des plénipotentiaires anglais venant de signer à Gand le traité

de paix de 1815! Toutes deux, nos Sociétés poursuivaient le même but: unir la théorie scientifique et l'habileté pratique de manière à confondre théoriciens et praticiens, botanistes et jardiniers, dans un même effort vers la perfection des cultures.

Pendant un siècle, sans défaillance, sans faiblesse, sans lassitude, vous avez jalonné la route de l'avenir en signalant et en récompensant tous les efforts.

Scmblable à l'arbre admirable qu'il a choisi pour emblème, votre cercle reste, comme le chêne, toujours ferme et vigoureux, étendant ses rameaux puissants à l'ombre desquels l'horticulture se développe en sécurité dans tout l'empire Britannique!

Puissiez-vous continuer *in aeternum* votre tâche civilisatrice! Puissiez-vous ne jamais cesser de briller comme un phare éclatant, pour le plus grand honneur de l'horticulture anglaise et pour la plus grande joie de l'horticulture du monde entier!

Se souvenant, non sans émotion, des temps si lointains de sa fondation, la Société Royale d'Agriculture et de Botanique de Gand adresse à sa sœur bien aimée, la "Royal Horticultural Society," l'expression de ses félicitations cordiales et des vœux bien affectueux qu'elle forme pour sa longue, durable et féconde prospérité!

Ad multos annos!

Le Président—C^{te}. DE KERCHOVE DE DENTERGHEM.

Gand, le 1 Mars 1904.

Le Secrétaire-Général—E. FIERENS.

The NATIONAL ROSE SOCIETY was represented by Mr. E. MAWLEY, who presented the subjoined address:—
TO THE PRESIDENT AND COUNCIL OF THE
ROYAL HORTICULTURAL SOCIETY.

In the name and on behalf of the National Rose Society—one of the oldest of the special Horticultural Societies in the kingdom—we desire to give expression to the congratulations and hopes which all the horticulturists and Horticultural Societies of this country are feeling at this most auspicious celebration of the Centenary of the Royal Horticultural Society.

We venture to express the belief that to-day marks the beginning of a new era of even yet more distinguished success in the history of the old Society, from which—we take this opportunity of publicly stating—the National Rose Society has, at all times and in all possible ways, received the most generous and ungrudging assistance and support.

Signed on behalf of the National Rose Society,

S. REYNOLDS HOLE, D.D.,

Dean of Rochester, President.

EDWARD MAWLEY, Secretary.

The congratulatory address from the Verein zur Beförderung des Gartenbaues in den preussischen Staaten was then presented by Dr. MASTERS:—

AN DIE ROYAL HORTICULTURAL SOCIETY
IN LONDON.

HOCHVEREHRTE GESELLSCHAFT.

Zu dem Tage, an welchem Sie in Gegenwart Seiner Majestät des Königs, Ihrer Majestät der Königin, und der Königlichen Familie die Eröffnung Ihres eigenen Heims; Ihrer Gartenbauhalle, und damit zugleich das Fest Ihres 100-jährigen Bestehens feiern, erlaubt sich auch der Verein zur Beförderung des Gartenbaues in den preussischen Staaten seine herzlichsten Glückwünsche auszusprechen.

Ist doch die Gründung Ihrer Gesellschaft vorbildlich gewesen für die Bildung unseres Vereins im Jahre 1822, wie für so viele andere Vereine in den verschiedensten Ländern.

Als einer der ältesten unter diesen, hat unser Verein die Leistungen Ihrer Gesellschaft im Laufe der vielen Jahrzehnte stets mit Bewunderung verfolgt. Mutig sind Sie vorwärts gedrungen, trotz mancher Schwierigkeiten, und wenn der Gartenbau in England auf einer so hohen Stufe steht, so dürfen Sie sich mit Stolz sagen, dass Sie dazu ganz besonders beigetragen haben.

Heute haben Sie eines Ihrer höchsten Ziele erreicht: ein eigenes Heim! Wir empfinden ganz mit Ihnen

dieses Glück, um so mehr, als auch wir nach einem eigenen Heim streben, das freilich noch in weiter Ferne liegt.

Mögen in der neuen Gartenbauhalle die grossartigen Leistungen Ihrer Gesellschaft nun um so schöner zu Tage treten und das neue Jahrhundert für Sie ein ebenso segensreiches, die Gartenbauwelt des gesamten Erdballs befruchtendes sein wie es das abgelaufene war.

Das wünscht aus vollem Herzen.

Der Verein zur Beförderung des Gartenbaues in den preussischen Staaten:

Der Direktor-gezeichnet, Freiherr VON CRAMM, Wirklicher Geheimer Rath, Excellenz, Herzoglich Braunschweigischer Minister, und Bevollmächtigter zum Bundesrath.

Der General-Sekretär, Prof. D. L. WITTMACK, Geheimer Regierungsrath.



MR. EDWIN J. STUBBS.

The Architect of the Royal Horticultural Hall.

(From a photograph by Elliott & Fry.)

[TRANSLATION.]

TO THE ROYAL HORTICULTURAL SOCIETY,
LONDON.

MOST ESTEEMED SOCIETY,—

The Horticultural Society of Prussia takes the opportunity of offering you its most hearty congratulations on the day on which, in the presence of His Majesty the King, Her Majesty the Queen, and other members of the Royal Family, you will open your own Home, your Royal Horticultural Hall, as a celebration of your Centenary.

The foundation of your Society served as an example for the formation of our Society in the year 1822, and also for the inauguration of similar Societies in other countries.

As one of the oldest of these, our Society has always followed with admiration the actions of your Society in the course of its many decades. You have courageously advanced in the face of many difficulties, and now that horticulture has attained to such pre-eminence in England, you may justly recognise that you have contributed to this proud position in an exceptional manner.

To-day you have gained one of your highest aims—the acquisition of a Home! We sympathise fully with you in your good fortune, the more so because we too are endeavouring to secure our own Home, though this at present looms in the far distance.

May the grand achievements of your Society shine with a still brighter light in the new Hall, and may the new century prove as fortunate for you, and as beneficial to the horticulture of the whole globe, as has been that which is closed!

These are the most hearty wishes of the Horticultural Society of Prussia.

Signed—

The Director, BARON VON CRAMM, Actual Privy Councillor, Excellency, Minister of the Duke-dome of Brunswick, and its representative in the Bundesrath.

The Secretary-General, Professor Dr. L. WITTMACK, Privy Councillor.

THE PRESIDENT of the Society then requested His Majesty to be graciously pleased to declare the Royal Horticultural Hall open, and on His Majesty assenting, the architect, Mr. Edwin Stubbs, who was presented by the President, submitted to His Majesty plans of the Society's offices erected in conjunction with the Hall.

HIS MAJESTY then said: "I HAVE MUCH PLEASURE IN DECLARING THIS ROYAL HORTICULTURAL HALL—THIS MAGNIFICENT HALL—OPEN." (Applause.)

Before leaving the Hall the QUEEN was pleased to accept a bouquet of Orchids from LADY LAWRENCE. Princess VICTORIA accepted a bouquet of Souvenir de la Malmaison Carnations from MISS LAWRENCE. Into the composition of the bouquet presented by Lady Lawrence to H.M. the Queen entered appropriately enough *Odontoglossum crispum* long known as O. Alexandræ. This favourite Orchid was discovered by Hartweg, one of the Society's collectors, and introduced to cultivation by Weir, another of the Society's collectors.

As their Majesties left the Hall Lieutenant Charles Godfrey's band played the National Anthem, and the assembly cheered heartily, the applause being taken up vigorously outside the Hall as the Royal party drove away.

THE NEW HALL IN VINCENT SQUARE, WESTMINSTER.

THESE buildings, erected to commemorate the Centenary of the Royal Horticultural Society, have been built upon an almost rectangular site on the north-east side of Vincent Square, Westminster, overlooking the playing fields of Westminster School, an open space of some 10½ acres in extent.

The frontage to Vincent Square is 146 feet, and the side frontage to Bell Street, in all, about 122 feet. Messrs. G. E. Wallis & Sons, Ltd., of Maidstone, are the contractors for the superstructure.

The excavations and concrete foundations were carried out by Messrs. John Mowlem & Co.

The buildings, erected from the designs of Mr. Edwin J. Stubbs, architect, are faced with red bricks, and have dressings of Portland stone. The central frontage is occupied by a porch of Portland stone, forming the principal entrance to the Exhibition Hall, flanked on either side by the entrances to the administrative portions upon the upper storeys.

In order to obtain the maximum space for the holding of the Society's flower shows, the whole of the ground storey, except the portion occupied by a small entrance hall and the necessary staircases, has been devoted to this purpose. The buildings are so arranged that the Exhibition Hall and lecture room, with cloak rooms and retiring rooms (which comply with the regulations of the London County Council for public buildings, and will be licensed for music and dancing), may be let for entertainments without interfering with the privacy of the Society's library and offices.

Exhibition Hall.—Entering at the principal entrance sets of oak doors lead into the entrance hall, beyond which another set of oak doors gives access to the Exhibition Hall, 141 feet long, 75 feet wide, and 48 feet high to the underside of the roof lantern.

From the entrance side of the Exhibition Hall two annexes, each about 46 feet long, 24 feet wide, and 17½ feet high, extend to the front of the building.

A musician's gallery is provided at the end of the Exhibition Hall.

From the Exhibition Hall and annexes five separate exits, in addition to the main entrances, lead directly into the streets.

(For continuation see p. 77.)



THE Gardeners' Chronicle

No. 919.—SATURDAY, August 6, 1904.

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THE DEFECTIVE CROPPING OF THE HAUTOBOIS.

PROFESSOR E. ZACHARIAS, in the Proceedings of the Natural History Society of Hamburg, 1903, has an interesting paper on this subject, from which we summarise what follows. It has for many years been a matter of common knowledge among gardeners in this country that the varieties of *Fragaria elatior*—the Hautbois Strawberry of gardens—are apt to "run out," as the entire or partial failure to bear fruit is commonly termed, and the remedy is well known, viz., the interplanting with plants of the male sex. For many years past the poor crops of Hautbois varieties in the Vierlanden district have been the subject of much complaint on the part of the cultivators, notwithstanding the fact that the plants grow with vigour. The few fruits, moreover, that come to maturity exhibit incomplete development, and the opinion prevalent among the growers is that the plants have degenerated owing to long cultivation.

In order to put the matter to the proof, Professor Zacharias obtained in 1901 a number of plants from a grower, and

planted them in the Hamburg Botanical Garden. The grower stated that the growth of his plants, production of runners, and flowering were satisfactory, but that the set of fruit was greatly deficient. The plants flowered in the Botanical Garden in 1902—3, and an inspection of the flowers showed extremely short and small stamens, the pollen-sacs or anthers becoming quickly of a brown tint, producing no pollen-grains. Only occasionally were better pollen-sacs observed, which gave pollen in variable quantities. Those flowers which gave a number of fuller developed anthers were mostly larger than those having only sterile ones. The greater number of the plants might be regarded as females. The vegetative parts showed good development, and yet but few fruits set, and these were not well formed. The little seed obtained in 1902 was incapable of vegetating. Runners were taken in 1902 and planted in the usual manner. From fifty-six of these plants there flowered only twenty-three in the following year; and of the forty mother plants only five showed bloom in the same year (1903).

In the summer of 1901 Professor Zacharias sent a quantity of the plants from the grower previously named, as well as some taken from the edge of a ditch (garden escapes) in the grounds of another grower, to Graf zu Solms-Laubach, at Strassburg. Concerning these plants the Count wrote in July, 1903: "The plants fruited abundantly after a bed of the male *Fragaria elatior* was planted close by them."

In the summer of 1902 the author received a large number of runners from a cultivator whose plantations had afforded good crops of fruit. These runners were planted in the Hamburg Botanical Garden in the usual fashion—i.e., in groups of three—and, as is the usual practice, two being robust and one weaker. When the plants flowered in 1903, out of fifty-eight, only fifty-two bore flowers; and of these thirty-eight had mostly deformed, twelve well-developed anthers, and two which, besides one inflorescence each of abortive anthers, possessed one that was well developed.*

These plants may be described as female, male, and monoecious. The anthers when well developed were rich in pollen, and in general, so far as it was examined, the pollen appeared to be of normal quality, with only a few shrivelled grains. The abortive anthers with relatively short filaments formed no pollen. The female flowers were in general rather smaller than the male; on the other hand the male inflorescences were always much shorter than the female; moreover the male plants were mostly weaker and the runners also weaker than the female and monoecious plants. On none of the male plants was any fruit observed, while the females carried a good set of fruit.

In regard to the division of the sexes of *Fragaria elatior*, the same circumstances occur in the wild state as was observed among the cultivated plants in the Botanic Garden, but the variations show numerous deviations.

The grower from whom the fruitful plants in the Botanic Garden were obtained leaves of set purpose several "wild," that is male, plants in his beds, whilst the grower who

* In all the first blooms of the male plants the anthers were deformed.

furnished the barren plants makes it his practice to root up every "wild" plant, and he believes that fruit-bearing plants degenerate into "wild" ones.

The observations taken in the Botanical Garden afford no support to this theory. This grower's beds were planted with runners during two generations taken from female plants which depended for the pollination of their flowers upon the few flowers produced on the female plants.

Some authorities have recommended the rooting out of all male plants, as, we suppose, for the simple reason that they bear no fruit, and are in no way useful (see Gloede, *Les bonnes Fraises, deuxième édition. Paris, 1870*). This writer stated that the male plants, because they bore no fruits, were more vigorous than the others, and smothered them; hence the males must be rooted up, or only males would remain. It is just possible that Gloede knew of a variety or possessed one which bore both male and female blooms on the same plants, but on this point he is silent.

According to Keen, of Isleworth, a celebrated cultivator at the beginning of the last century (see *Transactions of the Horticultural Society of London*, ii., 1817, "On the Cultivation of the Strawberry in the open ground"), "a form of *Fragaria elatior* exists which has the male and female organs in the same blossom, and bears very freely; but that which I most approve is the one that contains the male organs in one blossom and the female in another. This bears fruit of the finest colour and of a far superior flavour. . . . I consider one male to ten females the proper proportion for an abundant crop."

My own practice was to plant three or four males in beds of four feet in width and ten feet long, distributing them about equidistant among the females in each bed. The beds were planted at eighteen inches from plant to plant, and two-and-a-half feet alleys were made between. The second year after planting the runners were allowed to run across the alleys, and fresh alleys cut across the beds, and the plants, both old and new, were cleared off the alleys, thus providing a large proportion of new plants well interspersed with males. I do not remember ever to have had a bad crop. If Hautbois are kept strictly to single plants and runners not allowed to spread, failure is often invited.

It may be stated that the name "*Vierländer Erdbeere*" is only used in Hamburg and not in the Vierlanden; and in other parts of Germany the variety is known as the "*Zimmt-Erdbeere*." *F.M.*

THE ROSARY.

ROSES AT ST MARY'S ISLE,
KIRKCUDBRIGHT.

PROBABLY no private garden in the south-west of Scotland possesses such an extensive collection of Roses as that at St. Mary's Isle, Kirkcudbright, N.B., the property of Captain Hope, Royal Navy, and under the able charge of Mr. James Jeffrey, a correspondent of the *Gardeners' Chronicle*. The gardens are of the most delightful kind, the natural advantages being skilfully supplemented by means of tasteful planting and great cultural skill. This summer the Roses have been exceedingly fine, so that a few notes taken on the occasion of a recent visit may be of interest.

A large number of climbing Roses are planted against the walls of the mansion and against the verandah, which in July presented a most delightful appearance, with a cloud of Roses clambering about it, and giving an exquisite effect. Among the best of these were Aglaia, a great success at St. Mary's Isle, both against the verandah and as a pillar; Rêve d'Or, which does extremely well; and Carmine Pillar. Close to the house there are also several pillar and weeping standard Roses; the best of these will be referred to again. Mr. Jeffrey's house is literally embowered in Roses, not only the walls being covered, but there are arches and pillars of the same flower all about it, while the walls adjacent are brightened by the Roses among the Ivy and other climbers which cover them. Here one may note how much brighter and better coloured is the Wichuriana Rose Pink Roamer in shade than when in full sun. On the south wall of Mr. Jeffrey's house *R. gigantea* is being tried, and from the growth it is making it gives every appearance of being a success. On this wall Gloire de Dijon blooms generally in April.

On entering the garden one was delighted with the many weeping and pillar Roses in perfect bloom. There are about 500 pillar and weeping Roses in the gardens, and many were literally covered with bloom. Here Aglaia again comes well to the front, both as a pillar and as a weeping Rose. Thalia is remarkably fine, one pillar 11 feet high in particular being visible a long way off, and of striking effect with its myriads of small white flowers. Then Leuchtstern was charming, and could hardly be surpassed in its own way by any in the collection. Universal Favourite was exceedingly fine also, and others noted as particularly good were Corona, Gardenia, Souvenir de la Malmaison, an old purplish-coloured Moss Rose unnamed, Ruga, Ruby Queen, Félicité-Perpétue, Anne of Gierstein, Alister Stella Gray (a favourite here), Reine Olga de Wurtemberg, Madame Alfred Carrière, with many other Roses of various classes, including as a matter of course Crimson Rambler, which does exceedingly well at St. Mary's Isle.

Noticeable among the Roses, both as a pillar or on a wall, was the old Flora, a favourite with Mrs. Hope, and known on that account as Mrs. Hope's Rose. Its beauty is of the highest kind, and it is grown in such quantities as to constitute a remarkable feature. There is a wall 100 yards long entirely covered with it, while it is prominent everywhere, and is literally loaded with many thousands of its full rosy flesh flowers. The other side of this wall is occupied with Tea and Hybrid Tea Roses, which are great favourites. These comprise such as Irish Star, Corallina (a great success and very free from mildew), Wm. Allen Richardson, Francisca Kruger, Sunset, Boadicea, Empress Alexandra of Russia (the drooping carriage of whose flowers detracts from its value), Dr. Grill, Chameleon, a splendid plant of Rêve d'Or, Sulphurea (rather tender), Enchantress, Catherine Mernet, Isabella Sprunt, Golden Gate (rather tender), Corinna, Meta, (extra good), Sylph, Anna Olivier (very good), Hon. Edith Gifford, Bridesmaid, Rubens, L'Idéal (very subject to mildew here), Her Majesty (always good), and Maréchal Niel (which does well on this south wall). At an angle of this wall there is a remarkably fine plant of Crimson Rambler, which has thousands of blooms upon it this season.

In the garden adjoining the glasshouses there are wooden trellises covering a sloping bank mainly facing the south, and these are covered with Roses, old and new. Here the single Polyantha was very fine. The Rose beds are extensive, and contain a large number of the best Hybrid Perpetuals, Teas, and Hybrid Teas, with some of other sections, such as the Bourbon Mrs. Paul. Among the best were Frau Karl Druschki,

Caroline Testout, Merveille de Lyon, Hon. Edith Gifford, Baroness Rothschild, L'Innocence, Souvenir d'Alphonse Lavallée, La France, Madame Derrux Donville, Mabel Morrison, Eugène Furst, Mrs. W. J. Grant, and many more which cannot be mentioned. All were remarkably vigorous, and many good show blooms could have been cut from the beds. Everywhere throughout the gardens Roses abound, and of all classes, from the Austrian Briars to the old Scotch Roses; and in all forms, some clambering up trees, some occupying beds by themselves—in fact, every available method is adopted, even the roof of the Mushroom-house being covered with the Queen of Flowers. S. A.

ROSE CRIMSON RAMBLER.

To convert this summer-flowering Rose into a "perpetual," it suffices, according to M. Charles

a wing has been added on the north-west; at the other end rises a fine clock-tower, which forms a very conspicuous object. The view from the mansion is extremely picturesque, the character of the landscape, already described, with the beautiful grounds of High Trees itself, making it a most charming spot. The ground in front of the mansion is laid out as an Italian garden, and the beds seen in our illustration are comprised of two artistic scrolls worked out in Box edging. At the farther end, to the left of our picture, is a very fine Azalea garden, which has undoubtedly been very pretty, although the flowers are now over. Still more to the left a flight of stone steps leads to a stone plateau, especially built to enjoy a commanding view of the Surrey hills, with the town of Reigate in the valley below. We were enchanted with this scenic effect, the like of which it is rarely one's



FIG. 37.—HIGH TREES, REDHILL.

Baltet, in the *Revue Horticole*, to insert on strong growths of the Rambler some buds of *Rosa polyantha* Madame Norbert Levavasseur.

HIGH TREES, REDHILL.

SITUATED a short distance from the town of Redhill, on the high ground near to Redhill Common, from which extensive and panoramic views are obtained of the lovely Surrey hills and of the Weald country, stands High Trees, the home of M. Marcus, Esq. A more ideal spot on which to erect a residence it would be difficult to find, and certainly none nearer the Metropolis. Nestling below are the towns of Redhill and Reigate, with the winding gravel roads, a patch of water here, with a church spire rising there, the golden Gorse and blue Heather seeming almost to reach and merge with the towns themselves; such a scene as Linnell, who resided in the neighbourhood, loved to depict.

The residence at High Trees cannot lay claim to any antiquity, though probably the farmhouse which it supplanted was an old domain. The house is a square-built stone structure, to which

privilege to enjoy. Unless it were pointed out, one would little suspect the presence of a huge fort, recently built to guard the approaches to London, nestling among the Beech-trees on the summit of the hills in front. Looking towards the south-east from this eminence, one obtains an uninterrupted view of the Kentish Downs, and the elevation at which High Trees itself is situated is then apparent, for an escarpment on the side of the hill runs abruptly to the glen below. This slope, which is well wooded, has been converted into a kind of wild-garden, and a winding path carries one along its zigzag course through some of the loveliest natural scenery. The ground beneath the trees at the time of my visit was carpeted with Bluebells, to be succeeded by other of our native flowers. Conifers and flowering trees, such as *Pyrus* and *Prunus* species, &c., have been planted in this part of the grounds, and are succeeding well. The Conifers are quite a feature of the place, and have been judiciously planted among the native trees, most of them forming handsome specimens.

The view from the front drive is very striking and good; *Abies grandis*, *Araucaria excelsa*,

Cupressus Lawsoniana, *Sequoia gigantea*, *Pinus sylvestris*, and others mingling with the Beech and other native trees. Shrubs and trees do well at High Trees, and in spring-time especially are full of interest. Leading to the glass-houses and kitchen-garden is a high wall, on which is trained *Magnolia grandiflora* and *Wistaria sinensis*, both luxuriating, and earlier in the season covered with their charming flowers.

Rhododendrons one would not expect to find suited to this chalky subsoil, yet they grow and flower as though in their natural habitat; indeed, some beds of these plants grew to such bounds that they had to be cut down in order to conserve the view; but this severe treatment has only encouraged them to break into new growth with great vigour. Another shrub belonging to the same family as the *Rhododendron*—viz., the *Arbutus*—was also represented by

through the trees and past the tall clock-tower. Where sheltering trees have protected the fruit-bushes are fine crops of Apples, Pears, and Plums, but those which have felt the fury of these cold blasts have little or none.

The glass-houses are devoted to growing only those fruits and flowers which are suitable for use in the mansion, hence no rare and interesting plants are to be found, but Carnations, Begonias, *Spireas*, *Pelargoniums* (principally show varieties), *Eucharis grandiflora*, and other members which supply plants for decoration or cut bloom. There are five vineries and five Peach-houses, the latter occupied by well-trained trees carrying plentiful crops in all stages. Tomatos, Melons, Cucumbers, and Figs are also cultivated.

The grounds are in excellent order, and reflect the greatest credit upon the head gardener, Mr. J. B. Mead, and his staff.

the variety should be more extensively grown. It is very much esteemed by my employer and his friends here, but I do not know its name. *Thos. H. Sutton, gr. at Sturford Mead, Corsley, Warminster, July 21.* [The specimens sent confirmed our correspondent's statement. The flavour was excellent, but the number of peas in the pod was small. Ed.]

BROAD BEANS.

In Bunyard's Exhibition Longpod, and in the rather broader-podded Seville Longpod, we see evidence of the great improvements made in the Longpod type during late years. In the Mammoth Green Longpod put into commerce a few years ago by Messrs. W. W. Johnson & Son, of Boston, we also see what a stride has been made towards improving the green Longpods. Boston is in the midst of the Bean-growing districts of Lincolnshire, and at the recent exhibition of the Boston Horticultural Society, at which Longpod and Windsor Beans were finely shown, the Mammoth Green Longpod held its own against Bunyard's, the pods being long, handsome, and well filled. The green Beans are regarded as of superior flavour, and as they retain the green colour when boiled, they have come to be esteemed for table purposes.

The Windsor type has also been considerably improved, the samples of the Monster Windsor (a speciality of the firm above named), seen at the Boston show, were very fine, averaging four Beans in each, and in not a few cases five; and this in a season when, as far as Lincolnshire is concerned, Broad Beans have suffered severely from the black or smother-fly. The pods are therefore small generally; but if fine weather continues, the seed growers anticipate the samples of Beans for seed purposes will be good. The old Windsor Bean of years ago contained on an average two Beans in a pod; then came the Harlington Windsor with three Beans in a pod; and now comes the Monster Windsor with four Beans, and when specially grown for exhibition producing five. In this way the Broad Beans are led along the line of improvement, and with the most satisfactory results. *R. D.*

NEW OR NOTEWORTHY PLANTS.

SINNINGIA REGINA, SPRAQUE, N. SP.
(§ LIGERIA).*

This species was exhibited last year at the Ghent Quinquennial Show as "*Gesneria Regina*," by M. De Smet-Duvivier, from whom a plant was purchased for Kew, where it flowered in April and May, 1904. From the most cursory glance it was obvious that the plant was not a *Gesneria*, and on examination it proved to be a *Sinningia*. ("*Gloxinia*" of gardens), allied to *S. discolor* and *S. Menziesiana*. *S. Regina* is reported to have been introduced with a *Cattleya* from Brazil, but until this is confirmed by properly authenticated wild specimens, the possibility of a hybrid

* *Sinningia Regina*.—Caulis semipedalis teres carnosus, 4–5 lin. diametro, breviter pubescens, ut foliorum pagina inferior petioli pedicellique purpureus, foliorum paria 4–5 gerens. Petiolus plano-convexus, supra versus laminam leviter excavatus, 1–2½ poll. longus, pilis patentibus inaequalibus pubescens; lamina late ovata, basi auriculato-cordata, 4–8 poll. longa, 3–6 poll. lata, crenata, marginibus apiceque acutiusculo paulo reflexis, supra subtiliter velutina, subtus glabra, venis lateralibus utrinque 9–11, supra impressis, ut lamina contigua albidis. Pedunculi 4–6 in axillis tribus superioribus omnibus orti, 2–4 poll. longi, ut calyx patenter birsuti. Calyx viridis, lobis patentibus. 1½ lin. connatis, ovato-lanceolatis, 8–9 lin. longis. Corolla glanduloso-pubescent violacea, intus pallidior purpureo-maculata, tubo 2 poll. longo, ima basi valde antice curvato, postice carinato, carina anteriore multo minus conspicua, supra ovarium lateribus anticeque contracto, ventre valde inflato pallido, ore 8–9 lin. lato, lobis 4–5 lin. longis, 5–6 lin. latis. Glandulae oblongae distantes subaequales, 3 anteriores apice leviter curvate. Stylus persistens. Ovarium dense villosum.



FIG. 38.—PEAS GROWING IN STURFORD MEAD GARDENS.

some fine specimens, plentifully carrying the young fruits, which in the winter-time are so pleasing. One specimen of *A. Unedo* was quite 25 feet in height and as far through. In the lower grounds already mentioned is a notable example of *Abies grandis*, rising to over 100 feet in height.

Several flower-beds, mostly planted in the mixed system of bedding, with well-filled flower-vases, occupy positions on the lawns and terraces around the house; and a small rosary leads into the kitchen garden. This is admirably situated on the warm slope of the hill, naturally screened by the surrounding trees, which have the disadvantage of draining the borders somewhat during the summer. Good crops of vegetables occupy the breadths utilised for this purpose, and fruit-trees are plentifully planted along the borders by the paths. Beautiful as this spot appears in summer, one can see evidences of the effects of the cold north-west winds which in winter sweep

VEGETABLES.

AN OLD VARIETY OF PEA.

I AM sending a dish of green Peas gathered from a very old variety. I have grown it myself over thirty years. My father gave the late Mr. Hill, of Keele Hall Gardens, Staffs., some seed over forty-five years ago. Mr. Hill wished to supply his employer's table with Peas of first-class quality and good flavour. The Peas will cook sweet and tender, if getting a little old, better than any other Pea I know. I am sending a plant to show what the height of it is even during this dry, hot season; the culms have grown 7 to 8½ feet high, although they have not been watered or mulched. Yet the land is very dry and the temperature in the shade has been 76° to 86°. The photograph reproduced at fig. 38 was taken by my employer, H. Theodore Cookson, Esq., when the plants were in flower. I think

origin cannot altogether be excluded. There is this to be said, however, that the wild forms of many genera of Gesneriaceæ—e.g., *Episcia*—form very puzzling series, of which some of the members might easily be attributed to hybridisation, were their origin unknown.

Sinningia Regina is a strikingly handsome plant, about 9 inches high, with dark green velvety leaves, purple on their under surface. The flowers are pale violet and drooping, and are borne on long flower-stalks, four to six together in the axil of each leaf; as two successive pairs of leaves are usually close together on the stem, the effect is that of two many-flowered whorls, and is very fine. The duration of the flowering period is about six weeks, so that this plant is likely to become a favourite.

Besides its relationships with *S. discolor* and *S. Menziesiana*, *Sinningia Regina* shows considerable resemblance to some of the earlier forms of "*Gloxinia*" figured in the illustrated botanical periodicals early in the last century, though this may seem extraordinary to those who are only acquainted with the modern "*Gloxinia*," the result of continuous selection and hybridisation.

One of the parents of our modern "*Gloxinias*" was *Sinningia speciosa*, a very short-stemmed plant with bluish-violet drooping flowers; this is shown in Loddiges' *Botanical Cabinet*, No. 28, where it is said to come from "South America"; and rather improved forms of the same in Maund's *Botanist*, No. 105, and in Paxton's *Magazine of Botany*, xii., p. 267. A form with reddish under surfaces to the leaves, and which approaches *S. Regina* in the colour of the flowers as well, appeared in Curtis' *Botanical Magazine*, t. 1937. After this, caulescent forms made their appearance, such as are figured in Loddiges' *Botanical Cabinet*, No. 1566; in *Botanical Magazine*, t. 3206 (a white-flowered variety), and t. 3934, where the leaves are larger and variegated. One of the first hybrids was *S. Youngiana*, which was raised by Marnock about the year 1837, by the impregnation of *S. velutina* with the pollen of *S. speciosa*, and this was figured in Paxton's *Magazine of Botany*, vii., 51, and later in the *Botanical Magazine*, t. 4954. Other new forms were due to the introduction from Brazil in 1840 of the variety *rubra*, which was at once made use of by nurserymen for hybridising, for we find some of the results figured as early as 1844 in the *Botanical Register*, xxx., t. 48, where *S. guttata* is said to have been the pollen parent.

The turning-point in the history of our cultivated "*Gloxinias*," however, was in 1845, when an erect and regular-flowered plant was raised by Mr. John Fyfe, gardener at Rothesay, Bute; this had a white corolla with a violet centre, and five perfect stamens, instead of the four usual in Gesneriaceæ. Unfortunately for the systematic botanist, no exact record of its parentage was made, though in *Flore des Serres*, t. 311, where it was figured three years later, *Sinningia speciosa* is stated to have been one of the parents.

After this progress was easy, and we find a white flower with crimson centre in Regel, *Gartenflora*, iii., t. 76 (1854); pink and bluish-purple forms in *Flore des Serres*, t. 1002, and a great variety of shades in tt. 1434-6; still more striking colours are shown in *La Belgique Horticole*, vi., p. 161 (1856), where we have violet corollas with yellow centre, and white with red and yellow centre. Except that the pendulous form of flower is rather more in evidence, some of these latter plates show the "*Gloxinia*" practically as it is to-day. T. A. S.

THE GINKGO AS AN AVENUE TREE.—We have often had occasion to recommend the Maidenhair-tree, *Ginkgo biloba*, alias *Salisburia adiantifolia*, as a town tree; and we are confirmed in our opinion by an illustration in the *Florists' Exchange* for July 9, showing a fine avenue of these trees in the city of Washington. The tree is easily transplanted, is relatively free from insect and fungus pests.

SOILS AND MANURES FOR SPECIAL CROPS.

(Continued from p. 64.)

THE next horticultural plant to which attention is directed is the *Carnation*, which, by reason of its great merit, has during recent years rapidly forced itself into an important place in the floral trade. The great variety of colour, fragrance, beauty of form, and keeping quality of the *Carnation* have made it a decided favourite with all lovers of flowers.

A plant of so much importance in the floral trade is certainly one reason why its proper culture should be carefully considered; therefore Messrs. A. F. Woods and R. E. B. McKenney have included it in the glasshouse plants under special treatment.

THE CARNATION.

In regard to the chemical composition of the plant, we find that lime and potash run very much together; both of these plant-food elements seem to take part in the transport of carbohydrates (starch) and the conversion of available organic substance into "building material." Hence, upon the sufficiency in the soil of these two substances depend to a very large extent the successful growth and development of the *Carnation*. In outdoor culture as much as 1,000 lb. of lime per acre is sometimes applied for *Carnation* growth, and potash in an available form is very essential.

The following table shows the chemical composition of the *Carnation*-plant, with its roots, and separated stems and leaves:—

Selected constituents in the *Carnation*.

Constituents in the ash:	Whole plant.	In roots.	In stems and leaves.
	P. cent.	P. cent.	P. cent.
Potash	29.2	21.5	33.6
Lime	22.6	25.9	19.5
Magnesia	2.2	2.3	2.1
Phosphoric acid ...	12.6	8.9	14.0

These figures point to the fact that the *Carnation* requires a well-balanced manure, which shall be of a staying character rather than one of too forcing a nature—a plant-food which becomes available slowly but regularly.

SOILS.

The *Carnation* especially requires a soil that drains rapidly, and one permanently good in aération. The very light or very heavy types of soil should, therefore, be avoided. A good clay pasture-loam or sandy loam is desirable, with plenty of root-fibre. Lime should be added to soils not already well supplied with this material. Special attention must be given thoroughly to incorporate whatever manure is used with the soil by repeated turnings. Four parts of soil to one part of well-rotted stable-manure, and 10 lb. to 15 lb. of bone-meal, may be added to each cubic yard of soil-compost. Many growers use much more bone-meal than this, sometimes as much as 30 to 40 lb. per cubic yard; but it is safer to use the smaller amount and supply any deficiency later. The compost should, as already mentioned, be thoroughly worked over several times before use.

If the compost is made in the autumn, one part stable-manure to three parts of soil can be used, and from 20 to 25 lb. of bone-meal to the cubic yard. At the first turning of the compost, 4 to 6 quarts of pure wood-ashes per cubic yard may be added if the soil is light; or if heavier, use air-slaked lime at the same rate. If wood-ashes cannot be obtained, use 5 oz. of sulphate of potash per cubic yard of soil. After the plants are set in the house they will require no feeding till the roots have taken thorough possession of the new soil. Any feeding before this time will

be likely to do harm and will do no good. Early feeding can be given, as in *Roses*, by a light mulch of well-rotted stable-manure. As the days grow shorter and colder, however, mulching should be discarded and liquid feeding used, as recommended for *Roses*. Wagner's solution, mentioned under "*Roses*," is one of the best artificial combinations, furnishing nitrogen, phosphoric acid, and potash. It may be used about once in ten days or two weeks as required, or it may be alternated with liquid organic manures, as is the case with *Roses*. The *Carnation* is more sensitive even than the *Rose* to overfeeding, especially during cloudy weather or semi-dormant periods, or when the roots are not well developed. If the soil becomes too rich, treat as in the case of overfed *Roses*.

CARNATIONS IN COAL-ASHES.

The Connecticut Experimental Station has done some very suggestive and valuable work in growing *Carnations* and other glasshouse crops in sifted bituminous coal-ashes and a mixture of 3 per cent. of peat-moss. This medium contains practically no plant-food. All that the plants get has to be added in the form of artificial fertilisers. One hundred square feet of bench space requires of nitrate of soda, 3 lb. 14 oz.; superphosphate, 18 oz.; sulphate of potash, 1 lb. 13 oz. This should be thoroughly incorporated with the ashes and peat before setting out the plants. Under the conditions of the experiment, this medium was found superior in some respects to rich compost made in the ordinary way.

The *Carnation* is very subject to fungoid diseases, some varieties being more liable to attack than others. Solutions of carbonate of copper and ammonia have been used with good effect, but all depends upon taking the work in hand early in the season. J. J. Willis, Harpenden.

(To be continued.)

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and General Summary, ante, pp. 70—76.)

IN our last issue was published a series of tables containing reports on the present condition of the fruit crops, and we now commence the reproduction of abstracts from the remarks with which our valued correspondents, who supplied the tabular matter, have also favoured us. In addition to these remarks our correspondents have, in almost every case and at our special request, indicated which in their opinion are the six best dessert Apples, and the six best kitchen Apples, for planting in their own neighbourhood. We desire to thank our correspondents heartily and propose to summarise their votes, dividing them into districts. The result of the poll will be published some time before the planting season commences. It is hoped, therefore, that the information will be of interest to all, and of service to those who will have reason to plant Apple-trees in a district with which they are more or less unfamiliar.

O.—SCOTLAND, N.

ORKNEY.—Fruit crops this year are nearly all that can be desired; but a storm in June accounts for the bad appearance of Pears. Our soil is a stiff loam, with a subsoil of clay and gravel. Altitude, 40 feet; aspect, south-east; site, partly sheltered. Thos. McDonald, Balfour Castle Gardens.

ROSSSHIRE.—After a fine display of blossom fruits set very freely. Apples, Pears and Plums are a splendid crop, and on young clean trees the quality is excellent. Gooseberries, Raspberries, and Currants are an exceptionally heavy crop. The soil here is of a medium consistency, very fertile, and of a warm nature. *Henry Henderson, Cromarty House Gardens.*

— We have no Apples, the buds having all been eaten by oulfinches. Pears, Apricots, and Peaches are not grown outside. There is an average crop of Cherries of good quality. Gooseberries and Raspberries are excellent. Strawberries and red Currants are an average crop. The crop of black Currants is enormous. Plums on walls are an average crop. The weather here has been very dry for the last two months. *Harry Low, Braemore Gardens, Garve.*

1, SCOTLAND, E.

ABERDEENSHIRE.—All fruit crops, excepting that of Gooseberries, are much better than last year, although not heavier than they have been previously. The soil is a medium loam on a pan subsoil, which provokes canker in Apples. *James Grant, Rothie Norman Gardens.*

— Apples and Pears have every appearance of being a good crop. But I am afraid the fruits will be small in size owing to the lack of moisture in the soil. Plums are under average. The soil is very heavy, stiff clay. *John Brown, Delgaty Castle Gardens, Turriff.*

BANFFSHIRE.—The fruit crops earlier in the season looked very promising, but owing to badly ripened wood and cold winds, and insufficient moisture at the roots, the fruit, which set well, has failed to swell. Small fruits are abundant; Strawberries are extra prolific, the variety "Leader" has proved to be of special value here on our heavy soil; Royal Sovereign is too soft to stand well, Viscomtesse Héricart de Thury is difficult to excel. Gooseberries are most abundant. Black and Red Currants are in perfect health. *J. Fraser Smith, Cullen Gardens.*

BERWICKSHIRE.—The fruit crops, on the whole, are good. Fly and other insect pests are not so numerous as in former years. We have a good loamy soil, part on clay, which seems to suit our fruit crops fairly well. *John Cairns, The Hirsell Gardens, Coldstream.*

— The soil here is light, good, and deep, in some places quite 18 inches deep. The fruit crops are very good and clean. Altogether this is a record summer here, and gardens are looking well. Strawberries are wonderfully fine. *James Hamilton, Manderston, Duns.*

CLACKMANNANSHIRE.—The Apple crop in this district is the best we have had for many years, and the fruit crops on the whole are very satisfactory. *A. Kirk, Norwood Gardens, Alloa, N.B.*

FIFESHIRE.—Small fruits are yielding exceptionally good crops. Black Currants are the heaviest crop of the season, the bushes being bent to the ground with fruit. The soil here is good, but on a cold clay bottom. *William Henderson, Balbirnie Gardens, Markinch.*

FORFARSHIRE.—Apple and Pear-trees had a fine show of bloom, but very few fruits of the latter have swelled, most of them having fallen after what appeared to be a good set. Apples are not a regular crop, some trees being very thin; but others are extra good and require thinning. *W. McDowall, Brechin Castle Gardens.*

— The fruit-crops in this district are rather disappointing, not being equal to the promise of the blossom in spring. The soil is a light loam, and does not seem to favour a long life to fruit-bearing trees. Apples especially suffer much from canker, and only a few varieties thrive well. Strawberries require replanting every three years; Currants and Gooseberry

bushes, &c., also require to be renewed frequently. *Thos. Wilson, Glamis Castle Gardens, Glamis.*

HADDINGTONSHIRE.—There was a profusion of blossom on all kinds of fruit-trees, but the "set" was, with the exception of Strawberries and Gooseberries, a very poor one. Gooseberries and Strawberries are enormous crops, alike in heavy and in light soils. Black and Red Currants are exceedingly poor with us, both as to crop and quality. Wineberries, Logan-berries, Brambles, and Raspberries promise well. Fruit-trees of all kinds are healthy, and more than usually free from disease and insect-pests. *R. P. Brotherston, Tyninghame, Prestonkirk.*

— The fruit crops in this locality are again very irregular, and although there was a splendid show of blossom on Apple, Pear, and Plum-trees, the amount of fruit that set properly differs greatly in certain places. Small fruits are a good crop, with the exception of Black Currants, which in some parts are a failure. Most of the soil here is shallow, and of a very sandy nature, resting on a subsoil of sand and gravel. In some parts there are broad strips of heavy loam, which is very fertile, and on which splendid crops of Strawberries and stone fruits are grown. *William Galloway, Gosford Gardens, Longniddry.*

KINCARDINESHIRE.—I never saw the blossom finer on all fruit trees than it was this season, but owing to some unaccountable circumstance there was not such a good set of fruit as one would have expected—probably owing to the wood not being properly ripened the previous season. The soil here on Deeside is of a light, sandy nature. *John M. Brown, Blackhall Castle, Banchory.*

MIDLOTHIAN.—Fruit trees were unusually full of flower, but the weather at the flowering period was cold and sunless. The soft or kitchen varieties of Apples are carrying good crops. Some varieties that were equally well flowered, and are usually good bearers, have no crop. Pears, both standard and wall trees, are carrying good crops. Small fruits and Strawberries are extra heavy crops. The fruit-trees and bushes are infested with insect-pests. *James Whytock, Dalkeith Gardens, Midlothian.*

6, SCOTLAND, W.

ARGYLLSHIRE.—We had fewer late frosts than usual, and fruit-blossom on walls and in the open set abundantly. In the garden the soil is a sandy loam, part of the orchard is peaty, and, as we get a heavy rainfall, which averages almost 60 inches per year, and much dull weather, we have to attend carefully to the root pruning of fruit trees. Plums on walls, especially the varieties Victoria and Kirke, are sure croppers; Raspberries never fail—the variety Superlative bears wonderful crops and lasts for a long time. Small fruits generally bear heavy crops. We need wet weather. *D. S. Melville, Poltulloch Gardens, Lochgilphead, N.B.*

AYRSHIRE.—All our fruit crops are good, excepting Pears, which were a mass of bloom, but did not set. Our soil is very light and sandy. *Thomas Gordon, Ewenfield Gardens, Ayr.*

DUMFRIES-SHIRE.—Crops of all kind are good. We have had a very fine spring and summer. The thermometer has only once touched the freezing-point since April 10. There is an uncommonly large set of Apples; Lord Grosvenor and Barton Freebearer have been thinned to the extent of three-quarters of their number. The soil is heavy, with a good percentage of clay. *John Urquhart, Hoddam Castle Gardens.*

— After the bad seasons we have passed through in recent years, it is gratifying to be able to report a good fruit year. All over this district (with one or two exceptions) we hear satisfactory accounts, both as to the quantity and

the quality of the fruit. Apples and Plums are over the average, and Pears, Peaches, Nectarines, Cherries, and Apricots can compare favourably with the best of fruit years. Bush fruits are also good, Raspberries and Gooseberries giving an excellent return. Strawberries are an extra good crop, all over, and the weather has on the whole been dry and warm, so that gatherings of this fruit have already been secured in good condition. Generally speaking, our climate is not the best for growing high-class fruit. Our soil is light and shallow, and the climate damp and subject to sudden and extreme changes all through the year. *John Mackinnon, Terregles, Dumfries.*

— Gooseberries, Black Currants, Raspberries, and Strawberries are over average. Red and White Currants are not quite so good. Apples, Plums, and Cherries are an average crop. Pears are under average; they never succeed well here as our soil is too light. It is a light sandy loam, subsoil red sand, with gravel beds. *Jas. McDonald, Dryfeholm, Lockerbie.*

KIRKCUDBRIGHTSHIRE.—We have in this district an excellent crop of all kinds of fruit. This is more than was expected after the wet and sunless autumn we had to ripen the fruit-buds. The soil here is very poor on a gravelly bottom. *N. Macfadyen, Glenlie Gardens, New Galloway.*

WIGTONSHIRE.—Fruit crops in general are very satisfactory. Apples, Pears, and Plums upon walls have required considerable thinning. Plums on bush and standard trees are not so plentiful. Strawberries and small fruits are abundant, and being favoured by a fair amount of moisture, followed by heat, the ripening process goes on as well as could be desired. The soil is sandy loam resting upon a fairly porous substratum. *James Day, Galloway House Gardens, Garliestown.*

2, ENGLAND, N.E.

DURHAM.—This garden is near the sea, and on the limestone, which, from its dry nature, requires a deal of rain during the summer. Strawberries do not come to perfection, but vegetables succeed well. Blight is very bad, and the trees are covered with aphid and honey-dew. Unless rain comes soon the crops will be partly spoiled. *Robert Draper, Seaham Hall Gardens, Seaham Harbour.*

YORKSHIRE.—Apples are a very heavy crop. Pears are also good, but they suffered from Pear-mite, which is increasing in this district. Currants are good, but are dropping their leaves owing to fly. Gooseberries are a heavy crop and free from the leaf-caterpillar. Strawberries are a splendid crop. The soil is a light loam overlying sand, and the manure we use is chiefly leaf-mould. *John McClelland, Ribston Hall Gardens, Wetherby.*

— In the spring there was a promise of abundant crops; Apple, Plum, and Cherry-trees were in most gardens in this district very full of flower; Pears were not so promising owing to the cold, sunless autumn. Some trees on walls, including the varieties Marie Louise, Easter Beurré, Beurré Diel, and Brockworth Park, have good crops, but many varieties are thin and scarce of fruit. Plums on strong clay land have nearly all dropped off, on limestone and chalk sand they are about half a crop. Apples have dropped very much, the very dry June (rainfall $\frac{3}{4}$ of an inch) being too dry for them. The Loganberry is looking splendid, and Strawberries are extra good in crop and quality. *Bailey Wadds, Birdsall Gardens, Yorks.*

— The fruit crops in this locality exceed my expectation. Strawberries are a remarkable crop on strong soils, but the recent hot weather affected greatly the plantations on lighter soils. The soil in this garden is strong. In some

instances Gooseberries suffered much from the ravages of birds on the buds. Green-fly has been much in evidence on Red and Black Currants. We also had an attack of Black Currant bud mite, but with timely picking off the affected buds and syringing the bushes with extract of Quassia, we have succeeded in checking it and have a good crop of fruit. *John Snell, The Gardens, Farnley Hall, Otley.* [We shall be glad to hear of the state of the bushes next year. Ed.]

— There was abundance of blossom on fruit-trees, but the crop of fruit is scarcely so heavy as was anticipated. Apples are plentiful, although many varieties are not bearing. Pears bloomed profusely; the fruit, however, did not set, the crop therefore is light. There are good crops of Victoria Plums, but other varieties are very thin; small fruits are a good average. Aphides have caused much injury on Cherries, Plums, Peaches, and Currant bushes. The soil in this garden is a medium loam, overlying sandstone. *J. S. Uper, Wigganthorpe Gardens, York.*

— The subsoil of this district is chalk, and over this is a layer of clay-loam, varying in depth from 1 to 4 or more feet; on the higher ground the soil is lighter and not so deep. Shallow soils are not suitable for fruit-trees when resting on chalk or gravel. In the early part of this season all fruit-trees gave great promise; there was an abundance of blossom, and, with the exception of Pears, Plums, Peaches, and Apricots outside, all other fruits are over the average. More rain would have prolonged the Strawberry season, and greatly assisted all other fruits to produce size and flavour. Aphids has been troublesome on Currants, Gooseberries, Plums, &c. *John Allsop, The Gardens, Dalton Hall, Dalton Holme, Beverley, East Yorks.*

— Apples are not so plentiful as the show of bloom led us to expect. Some varieties have no fruits, and others bear an average crop of good fruits. Pears on walls are plentiful and good; pyramids are almost blank. Plums on walls are an average crop, and good. Apricots are scarce, but good. Peaches appear fairly well. Small fruits are heavy, but blight and fly are very bad, especially on Black Currants. The ground, even where mulched, is cracked, and much in want of rain. *Charles Simpson, Newby Hall Gardens, Ripon, Yorks.*

— There was an abundant blossom on Apple and Pear-trees, but not so on stone fruit-trees, excepting Plum-trees. For the first time in twelve years we have a very thin crop of Apricots. Of Plums, there are good crops on Victoria, Jefferson, and Kirke's, growing on east and west walls. Cherries are a very thin crop. Apples good. The two best-cropping Pears are Louise Bonne of Jersey and Marie Louise. Strawberries have been and are abundant, and fine in size and quality. An old variety, raised by a clergyman near here some forty years ago—viz., Newton Seedling—has come out the best for preserving purposes. Our soil is a stiff, loamy one, resting on magnesian limestone. *Henry J. Clayton, Grimston Gardens, Tadcaster.*

— Apples vary in this district this season, some varieties cropping very heavily here, although the same varieties within a mile or so are quite a failure. Here Lane's Prince Albert is carrying a very heavy crop, also Domino, Keswick, Codlin, Bismarck, Warner's King, and Cockpit; Ecklinville Seedling is again a failure, both in the garden and orchard. Plums vary much. Victorias and Rivers' Early Prolific are the best. Damsons are a very heavy crop. Apricots are a thin crop. Pears very moderate. All bush fruits are remarkably good. Strawberries have been the best I have had for some years, Royal Sovereign, Leader, Monarch, and Vicomtesse Héricart de Thury, being the best. *A. E. Sutton, Castle Howard Gardens, Welburn.*

(To be continued.)

BEGONIA "MARGARET GWILLIM."

Much improvement has been made in recent years in tuberous-rooting Begonias, and any further advance in these lovely flowers must be difficult of attainment. Several meritorious flowers were exhibited at the recent show at Holland House, including the one depicted in our illustration at fig. 39. It was shown by Mr. A. L. Gwillim, Cambria Nursery, New Eltham, Kent, under the name of "Margaret Gwillim," and had large, well-shaped flowers of a rich yellow colour, being nearly six inches across. The Floral Committee recommended it an Award of Merit.



FIG. 39.—BEGONIA "MARGARET GWILLIM."
(Much reduced.)

ORCHID NOTES AND GLEANINGS.

HALTON, TRING.

THE beautiful gardens of Alfred de Rothschild, Esq., near Wendover, have to be kept always showy and interesting summer and winter. In winter the arrangements of coloured foliage among the various tints of the handsome Conifers and other shrubs give bright and pleasing effects, and in summer there is a profusion of well-arranged flowers.

The plan of the gardens is that by means of plantations of fine trees and shrubs a series of gardens may be formed, and in each a distinctive character, changed every year, is maintained, and each garden is kept as unlike any of the others as possible. Thus there is an ever-changing beauty and variety of garden scene which amply compensates for the great amount of skill and attention required in the production.

The problem how to beautify the broad shrubberies and plantations which map out the different garden nooks with flowers in summer, without injury to the beautiful Conifers and other trees so much needed to be perfect in winter, was one which exercised Mr. de Rothschild and his clever gardener, Mr. R. C. Sanders, considerably. Climbing Roses injured the trees, and in most seasons their flowering time was short. Climbers of other kinds were objectionable because of their

fitful periods of flowering and more particularly because they were unsightly and injurious to the valuable trees after they had passed out of bloom.

Basket gardening on a novel plan was at last resorted to, and the result is that the part of the garden near the mansion affords a charming scene, in which large masses of brightly-coloured flowers appear as if borne on the different trees among which they are arranged.

The scene of this pretty garden is laid on the slope beside the mansion. The terrace has a very handsome geometrical garden arranged with carpet-beds, but with Lobelias and other dwarf-flowering plants taking part with the coloured-leaved Alternantheras and other bright dwarf foliage plants.

On a lower level is a rocky cascade falling into the small lake with brightly-coloured Water-Lilies, and stretching away beyond is an irregular, cleverly-planted shrubbery, in which the bluish tints of *Picea Parryana glauca* and similar Conifers, the bright yellow of the Golden Yews, and the various greens of the other shrubs give a sufficiently beautiful effect. But in summer flowers are wanted, and that too without disturbing the permanent plantation. The desired end is cleverly met by arranging scores of large baskets of Ivy-leaved Pelargoniums among the trees and shrubs, each basket being placed where flowers on the trees would be desirable, and not in lines or other arbitrary arrangement. The result is a brilliant show of flowers among the trees, naturally arranged, high up among the Conifers and lower among the dwarf shrubs, mingling with the tall Fuchsias which form prominent features in the arrangement of flowers which merge the smooth turf beneath with the shrubbery above. The first and smaller nook has baskets of Ivy-leaved Pelargonium Souvenir de Chas. Turner, giving countless heads of magenta-rose flowers; the longer stretch beyond, and enclosing the lawn with its pretty Indian-tent luxuriously furnished, and its handsome vases filled with Begonias and other bright flowers, having large baskets of the pale rose variety Madame Crousse. The baskets of flowers are raised upon invisible supports, and not suspended, they can therefore be naturally arranged where the bloom is wanted without injury to the trees; and when winter comes they are removed to the greenhouses until they are required for another year.

Noting other pretty garden scenes we pass by the skating-lake, encircled by banks and massed beds of close-growing shrubs. The banks are brilliant with the colour of Golden Yews and Privet, and relieved by the bright green of the Box hedges and bushes. The subsoil is chalk, and some trees and shrubs do not thrive well on it, but Box and Yew are fine subjects here. Large masses of *Olearia Haastii*, *Berberis stenophylla*, *Hedera Helix arborea*, and other close-growing subjects are here effective.

Beyond extends part of the Chiltern Hills, some of the hilly ground forming part of the estate being approached by a zig-zag walk and a pretty chalet reached on the high ground. Bamboos are planted in favourable situations, those by the edge of the water thriving best. In the cool rockery grotto, with stepping-stones over the water and a cool summer-house at the end, its backing of *Bambusa gracilis* is very pretty and appropriate.

Next comes the oval Italian garden enclosed by ornamental marble masonry, the niches bearing valuable statuary. The centre is of short grass with several large ornamental vases and with a beautiful mosaic walk round the central oval. But few flowers are used in this costly garden, yet it has many attractions and is a cool and pleasant retreat in hot weather.

Another turn leads to a very large fountain with a broad expanse of water round it and a

suitable arrangement of trees and flowers. Concealed in the stone-work at the side of the basin, and protected by plate-glass, are a large number of electric lights, which give a novel and charming effect when the light is turned on while the fountain is playing at night.

All over the seemingly endless ranges of borders filled with bright flowers, various devices are used to carpet or cover all the soil in the beds. In the shrubberies the lower branches are pegged down to cover the soil, and in the flower-borders different low-growing plants are used for the same purpose. Variegated ground Ivy forms an excellent carpeting; different varieties of Saxifraga, Sedum, and other moss-like plants are used. One plant much used for carpeting the borders in the winter-garden, and also in the flower-garden, was purchased as *Parietaria selaginoides*, but appears to be identical with the Corsican *Helxine Soleirolii*, a mossy Urticaceous plant. It can be multiplied to any extent, like *Selaginella*, and thrives well in almost any situation.

Of the countless plants used in the outdoor gardening, specially effective were a brightly variegated herbaceous *Phlox decussata*, effectively displayed in several arrangements; *Ophiopogon Jaburan variegatum*, masses of bright gold and green foliage; *Scrophularia variegata*, which forms a bright white-and-green edging, and is specially desirable for the country because rabbits dislike it. Fuchsias in great variety are very beautiful and covered with flower, but the last season, being very wet, it is said they were then much better. Shrubby Begonias are among the best and most certain of flower-producers, and are very effective this season.

The winter garden, with its lofty dome and rich mosaic paving, has the borders planted with bright flowers; and Palms, Bamboos, and foliage plants are arranged around. The spaces between the glass on the sides are closely clad with *Cobaea scandens* and *Ficus radicans* and *repens*, an arrangement which supplies an effective background without taking up too much space; for the object in the beautiful winter garden is effectively to decorate it with plants and flowers, and yet leave space for its other uses.

THE GLASSHOUSES.

Passing Mr. Sanders's comfortable dwelling, with rosary and flower-garden beside it, and along walks through broad borders of herbaceous perennials, Lilies, &c., which give good supplies of cut flowers, we come to the extensive ranges of glasshouses. In the garden around the mansion all is for beauty and effect; here everything is for utility, and for supplying the wherewithal to keep up the display. Long ranges of vineries, Peach-houses, Fig and Cherry-houses, Melon and Cucumber-houses in excellent bearing, tell of the useful side of gardening.

The plant-houses have a neat range of propagating-houses, and a goodly number filled with "decorative" plants in all stages. Carnations fill several houses, the *Malmaison* varieties having an enormous quantity of bloom. Of the other kinds *Carnation King Arthur* (large dark scarlet) and *C. Cecilia* (a large, floriferous, clear yellow) are two of the best, and grown in quantity.

Of decorative plants *Phyllanthus nivosus* and *roseo-pictus* almost fill a house; *Caladiums* one side of another house; *Dracenas*, *Crotons*, *Aralias*, and *Anthuriums* several houses. *Dracena Godseffiana* and *D. Sanderiana* are largely grown for all purposes, from the single plant in a small pot to the gigantic basket for suspending in the large houses. They are handsome always, and *D. Godseffiana* particularly so when covered with scarlet berries. Orchids are little grown, only good batches of *Dendrobiums*, *Calanthes*, and one or two others being accommodated. The large stove houses have a good show of ornamental

foliage plants, and the ranges of pits good stock for winter flowering, one range filled with *Nerine Fothergilli* major, about to send up flowers, being especially good.

The large kitchen and fruit gardens, although entailing extra labour this summer, are in excellent condition. All fruits, except Pears, are bearing well, and of the Pears some kinds are satisfactory. Strawberries have cropped heavily, and bush fruits been generally good.

others who have sent them to Reading for trial. All this is necessary in order that the firm may have exact knowledge of the value of each variety they include in their catalogue, and by this is meant their comparative value in relation to varieties distributed by other firms. As may be seen from the illustration the plants were put out in rows and kept to a single stem. We have seldom, if ever, witnessed a heavier crop of fruit than that collectively borne by these

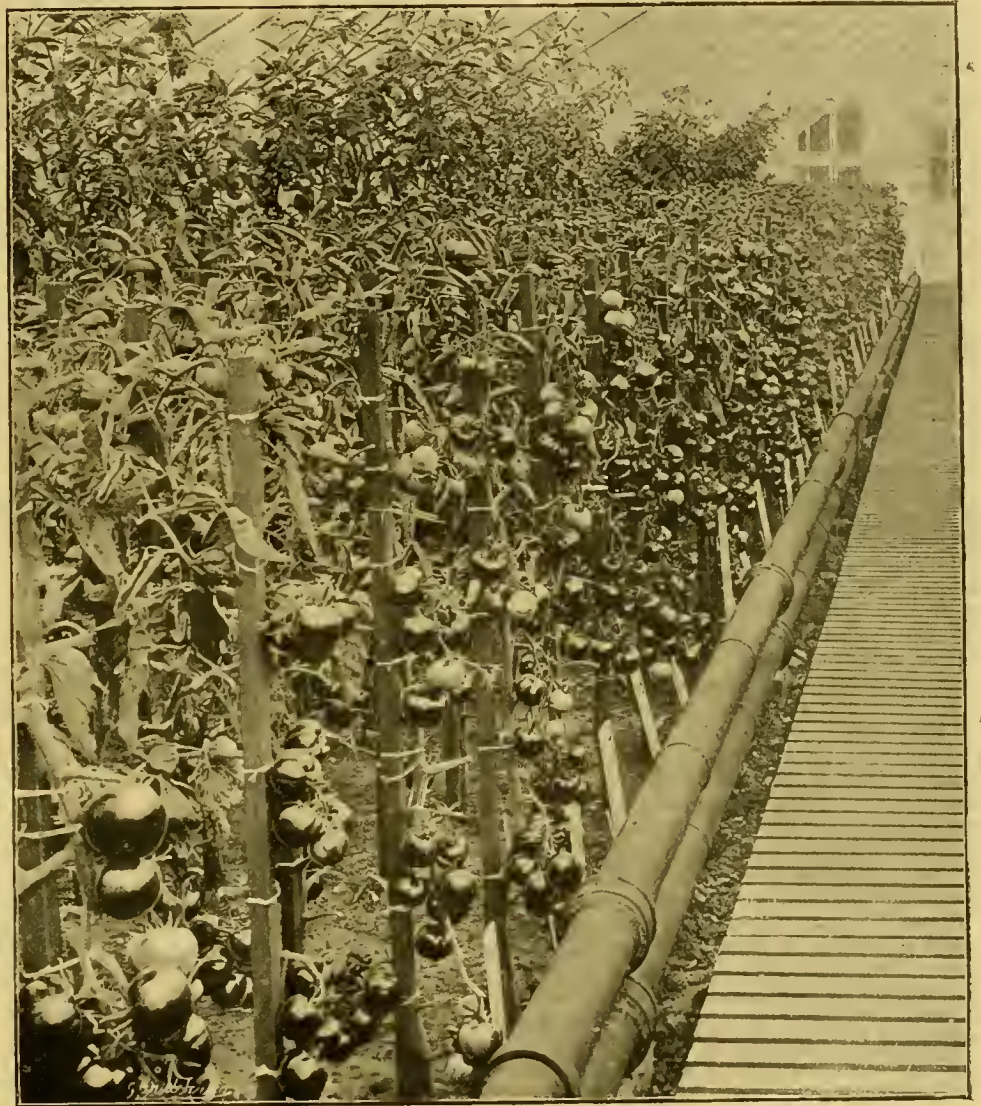


FIG. 40.—TRIAL OF TOMATOS IN MESSRS. SUTTON AND SONS' NURSERY, READING, SHOWING THE PLANTS ON ONE SIDE OF THE HOUSE ONLY.

NURSERY NOTES.

TOMATO TRIALS AT READING.

In fig. 40 is shown an illustration of a house containing an experimental trial of Tomatos in the nursery of Messrs. Sutton & Sons, Reading. The house was specially erected for this purpose last winter. Nearly one hundred varieties have been planted, there being six plants of each variety. Though there are some exceptions, the primary object has been to test varieties that are more suitable for cultivation in houses than in the open air. Another extensive trial is made out-of-doors, consisting of 250 trial rows, comprising almost all the varieties in commerce, and in addition a number of unnamed seedlings that have been raised by Messrs. Sutton & Sons themselves, or by

plants. The foliage was ruthlessly trimmed off before the photograph was obtained, because it was intended directly afterwards to select some of the best fruits for seed purposes, and this can be done more conveniently when the foliage has been removed. It is necessary to explain this in case any of our younger readers should conclude that the excessive mutilation of the plants had anything to do with promoting the crop of fruits.

We will refer to some of the more important varieties in the house, omitting individual reference to unnamed seedlings, as that would serve no purpose. The earliest variety to mature fruits is *Earliest-of-All* (Sutton), bearing a good crop of fruits of medium size, and as free from corrugation as such early-fruited varieties can be obtained. Next to these plants was noticed the old stock of *Earliest-of-All*, having less

smooth fruits, also a few plants of an exceedingly early ripening variety obtained from the Continent. This has very small and corrugated fruits, but though of no economic value at present, it will be used as a parent in cross-breeding. Indeed, this has been commenced, and the result of the first cross was bearing fruits. Magnum Bonum has larger fruits than those of Earliest-of-All, is of similar habit to that variety, but does not ripen so early. Winter Beauty is a well-known variety for fruiting in winter and early spring, and is an excellent sort for the supply of the market. Satisfaction (Sutton) has fruits somewhat larger in size than those of Winter Beauty, and is otherwise of much the same type. Abundance is one of the most productive varieties, with fruits of rather less than average size, which are produced in large clusters. Sutton's A1 has been well known for some years, and is one of the very best, having large, round, "Apple-shaped" fruits; it is a very free bearer. Eclipse (Sutton) has smooth fruits, which in shape are between those of the A1 and those of the "Perfection" type, which generally are more or less flat in comparison with their depth. Best-of-All (Sutton) is one of the best main-crop Tomatoes, having an abundance of smooth-skinned, heavy fruits. Those of Perfection (Sutton) are still larger, and are frequently used for exhibition purposes. Dessert (Sutton) has small fruits, and the variety is consequently recommended for dessert; and Cluster (Sutton) has still smaller fruits, of Pear-shape, and would be suitable for garnishing, decorating, &c.

"Wonder of Italy" is a variety obtained from Italy that produces enormous clusters of small Plum-shaped fruits, very much lacking in solidity. It is largely grown in Naples, and the immense clusters of fruits are hung up and dried for use in winter. Sutton's Open-Air is a very heavy-cropping variety producing large fruits, and the fruits being somewhat corrugated it is only recommended for cultivation out-of-doors.

We next saw the "Peach blow" and other varieties having fruits with pubescent skin, suggestive of that of a Peach. Turning to the yellow-fruited varieties, Golden Nugget is an early-ripening variety, having large clusters of small, round, yellow fruits: Sunbeam (Sutton) has distinct, egg-shaped fruits, and Prince of Wales is a heavy cropping sort, but Golden Perfection is one of the best, having solid, smooth fruits.

Some of the varieties raised by other firms and grown at Reading for comparison included Ham Green Favourite, Stirling Castle, Frogmore Selected, Duke of York, Conference, Up-to-Date, Holmes Supreme, Alice Roosevelt, The King (very fine), Lister's Prolific (very heavy cropper), Webb's Regina (an excellent variety), Hackwood Park, Swanley Superlative, and Laxton's Early Prolific. The most desirable improvement that could now occur in Tomatoes would be that of better and enhanced flavour.

In one of the houses there were several plants bearing ripe fruits of the Melon Pear (*Solanum muricatum*, also known as *S. guatemalense*); a fruit was illustrated in these pages, March 7, 1903, p. 160. Mr. Arthur W. Sutton cut one of these, and we thought it very agreeable, being juicy, and possessing flavour resembling that of a fully ripe Pear. Mr. Sutton also showed us the trials of Peas, which consist of 1,000 varieties, including 300 unnamed seedlings.

Messrs. Sutton have commenced cross-breeding with a view of improving the three-podded Pea sold on the Continent, which was illustrated in these pages on October 10, 1903, p. 258. It has been found that a Pea that produces pods in pairs is capable of greater productiveness than one that produces pods singly, therefore the triple-podded Pea, if equal in other respects, would be the most productive. Unfortunately the Pea is naturally a very short-lived annual, and it appears difficult to obtain varieties that will continue to fruit for longer than a few weeks.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Epidendrum radicans should be more largely cultivated; its corymbiform raceme of brilliant red flowers is very useful in a cut state. The plants have now commenced growth, and may be re-potted if necessary in a compost consisting largely of sphagnum-moss with a little peat and coarse silver-sand mixed with it. Being of semi-scandent habit, the young shoots should be tied around a few neat stakes, keeping the young growths well up to the light. When trained in this manner the flowers are very effective. Throughout the growing season abundance of water is necessary. This species may be easily propagated by removing the offshoots and inserting them thickly around the edge of a pot filled with compost. Let the plants be in the lightest position available in the intermediate-house. These cultural remarks apply also to the new and distinct hybrid, *E. Boundii* ×. Both plants when grown strong will remain in bloom for several months together.

The Work of Watering.—At this season of the year much time is taken up in watering, and few matters are more important. In addition, care is necessary in affording the plants shade from hot sunshine and in admitting fresh air to the houses. Such Orchids as the deciduous *Calanthes*, *Phaius*, *Mormodes*, *Catasetums*, *Cycnoches*, *Chysis*, &c., are now in full growth, some of them are already commencing to form their new bulbs, and if the plants are healthy and the pots have become full of roots, the plants will require more water at this period than at any other time of the year. The supply should be continued until the growths are fully made up and the leaves of deciduous varieties commence to turn yellow and fall away. *Cypripediums*, *Bolles*, *Pescatoreas*, *Sobralias*, *Epidendrums*, *Bulbophyllums*, *Cirrhopetalums*, *Megaceliniums*, *Cymbidiums*, &c., all require copious waterings each time they become dry. Those species which do not possess pseudo-bulbs, as *Aërides*, *Angræcums*, *Vandas*, *Phalanopsis*, *Saccolabiums*, *Sarcanthus*, *Renantheras*, *Luisias*, &c., should be afforded water often enough to keep the sphagnum moss on the surface fresh and green.

Several of the earliest *Dendrobiums* are finishing their growth, and if too much water be afforded them, they will commence to grow again and fail to flower well at the proper season. Late-growing varieties should not be allowed to get dry until the new growths are finished. *Cattleyas* and *Lælias* that were potted in the new leaf-soil mixture, should also be very carefully watered, merely sprinkling the surface moss each time it becomes dry, using a fine rosed watering pot for the purpose. Injudicious and heavy waterings will soon cause the leaf-soil to become sodden, when the roots will decay, and the plants become spotted and diseased. In some districts where the houses are at a high elevation and well exposed to the light and air, *Cattleyas*, *Lælias*, and their hybrids are greatly benefited by light overhead syringings several times each day during very hot weather, but in low-lying situations it is unsafe to do this.

Spray the Mexican *Lælias* each afternoon at closing time; they will thrive better for the extra heat and moisture for a few hours before sunset. All the Chimæroid *Masdevallias* should have their foliage well syringed every day and be frequently watered at the root, whilst those of the coccinea, *Harryana*, and *Veitchii* sections should be watered only when the compost becomes dry. The *Odontoglossums* generally should not be kept in a saturated condition at this season or the old roots will decay, and the foliage become thin and weak. Afford air to all the houses whenever practicable. The shading material on the cool houses should be kept down during the whole time the sun shines on the roof. The blinds on the other divisions, especially *Cattleya*, *Lælia*, Mexican and *Dendrobium* houses, should not be let down so early in the morning as heretofore, and they should be pulled up earlier in the afternoon as the season advances.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cucumbers.—To keep up a supply of this favourite salad through the autumn and winter months, seeds should now be sown in small pots. The plants intended for autumn fruiting may be expected to supply fruits in six weeks from the time of sowing the seeds. These plants may be developed rather freely, whereas those which will fruit in winter should be encouraged to make strong, sturdy plants, and be allowed to cover the trellis with vine before developing fruits; the pots or beds also, whichever may be preferred, should be limited in size, and be well filled with roots. Improved Telegraph is a good variety for this purpose. Plants bearing fruits in houses and frames should have all exhausted growths and leaves removed once each week, to make room for young bearing shoots. If the plants appear weakly crop them lightly, and if they are vigorous stop each shoot at one joint beyond the fruit. Afford ventilation early in the morning, and do not postpone the afternoon syringings on hot days until the atmospheric temperature has fallen too low. Avoid over-cropping, but provide the roots with moderate supplies of diluted liquid-manure. Any empty frames may still be planted with Cucumbers.

Tomatos.—Plants intended for fruiting in winter, now in 6-inch pots, if grown in the open, will be sturdy and short-jointed. Before the pots become overcrowded with roots, shift the plants into the pots in which they will fruit, convenient ones being 8 inches in diameter. The soil should consist of a good fibrous loam, to which may be added lime-rubble and wood-ashes in a moderately dry condition. When potting, allow space in each pot for applying light top dressings, and see that the plants are made thoroughly moist at the roots before shifting them into larger pots. Place the plants on a hard base in a sunny, sheltered position in the open-air if the weather is good; but if it is wet, place them under glass until the roots have taken hold of the new soil. Six weeks in the open afterwards will considerably benefit the plants.

Cherries.—Supply trees in pots with plenty of water at the roots, and syringe the foliage freely to keep it clean. Now that the trees have plump buds be careful not to excite them into premature growth. Trees growing in borders will also need to be supplied with water at the roots, and should they be weakly afford them diluted liquid-manure. Fumigate the house occasionally to keep aphides in check.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Violets.—The present dry weather is very trying to plants growing in light shallow soils, and, if the means are at hand, all possible assistance should be afforded them where *Violets* are urgently required during the autumn and winter. Copious waterings, followed by a mulch of some light material, such as manure from an old hot-bed, leaf-soil, or short lawn-grass, is of great assistance, as is also the liberal use of the syringe morning and evening. Where red-spider has made its appearance, it may be kept in check by sprayings of "Spidacide." All "runners" must be promptly removed, and the plants confined to a single crown.

Richardia Elliottiana and *R. Pentlandi.*—When the foliage of these plants begins to turn yellow, the supply of water should be gradually reduced until the leaves die down, when it must be withheld altogether. When the soil in the pots is quite dry the plants may be stored in any place which is free from drip, provided that the atmospheric temperature does not fall much below 45°. Or the tubers may be taken out of the soil and stored in a box of dry sand, where they will winter perfectly well so long as the sand be kept dry and the temperature does not fall below the figures mentioned above.

Roman Hyacinths and *Polyanthus Narcissus.*—Bulbs should be potted at once in order to flower early. They may either be placed to the number of three or four in a 5-inch pot, or planted some-

what thickly in boxes, according to the purpose for which they are required. A compost consisting of one-half old potting-soil and one-half fresh loam, together with a little well-rotted manure, will be suitable. The pots containing the bulbs should then be placed out-of-doors and covered with ashes to the depth of 3 inches. For the early batches a shady position should be selected, but those for succession should be plunged in the open.

"Show" and "Fancy" Pelargoniums.—Cut the growths back to within an inch or two of the old wood, and place the plants in a cold frame or pit to "break." They may be afforded a watering, after which a syringing overhead twice a day will afford the plants sufficient moisture until they break into growth. Usually many more growths are produced than are required, therefore disbudding is necessary. In the first instance the weak and badly placed shoots should be removed, leaving those which are about equal in point of strength, and subsequently further reducing the number if necessary. When the shoots are an inch or two in length let the plants be repotted. Shake all the old soil from among the roots, and at the same time shorten the latter slightly, and place the plants in pots only just large enough to contain the roots comfortably, allowing room for a little soil around and among them. A suitable compost may consist of three parts fibrous loam and one part flaky leaf-soil, together with some coarse silver-sand. The plants should be potted firmly, and should be provided with light shade for a few days. Afford water sparingly until the plants are well established. Cuttings may be inserted at the present time, and they will form useful decorative plants by the spring. Select from among the prunings short-jointed and well-ripened shoots of the current season's growth, and shorten them to a few inches in length. Insert these singly in thumb-pots filled with sandy soil, and place them on a greenhouse shelf or in a cold frame, where they will make roots readily.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Peaches.—There will be much to do in the hardy fruit garden until the work of training, summer pruning, and the gathering of the fruit is finished. We have just completed training the shoots of such early Peaches as Waterloo, Alexander, &c., taking the tops off some of the leaves to expose the fruits after they had been thinned sufficiently. The ground around the trees has been mulched and afterwards thoroughly soaked with water for the last time before the fruits ripen. To have these early Peaches good-flavoured the fruits must be gathered when a little under ripe and then taken to a cool airy fruit room and placed separately on some soft dry material such as cotton-wool, &c. By this treatment the flesh will ripen well through to the stones and the outer flesh will not become woolly. By gathering the Peaches when thus under-ripe there is less danger of bruising the flesh when detaching them from the branches. If the fruits are to be bottled it is better to have trays that will hold about three dozen. Place some soft material at the bottom of the trays, and gather the fruits whilst under-ripe, putting the Peaches carefully in the trays in such a manner that they will not touch each other. Place the trays in the fruit-room, and do not handle the Peaches except to take one up to see if it is properly ripe. If it is ripe convey the trays containing the fruits to where they will be bottled. In this way I have taken some hundreds of fruits without them suffering any damage. Peaches ripened in mid-season are best for bottling. Following Waterloo and Alexander are the useful varieties Hale's Early, Early York, Dagmar, &c. Although these fruits are not so large as those of the mid-season varieties, they maintain succession until these latter are fit for use. Train-in the required number of shoots if this has not yet been done. Syringe the foliage thoroughly and afford water to the roots. Do not permit the trees to ripen an excessive number of fruits.

Insect pests.—Preserve the fruits from damage by earwigs, wasps, flies, &c. The best method of

catching earwigs is to place pieces of Bean-stalk or similar hollow stems at intervals over the trees, placing the ends under the branches close to the walls. Examine the stems every alternate day, and blow or shake out the earwigs into a pail containing water and paraffin. Bottles containing beer or some other sweetened liquid will serve to catch wasps and flies. We have seen but few wasps this year. Complete the pruning of all kinds of fruit-trees as quickly as possible, whether espaliers, bushes, cordons, &c. Upright cordons, if planted rather widely apart, should have a few young shoots trained to the walls at intervals, not only for the covering of the brickwork, but for affording fruit. Take care that no trees suffer from drought at the roots; and should red-spider infest the leaves, get the engine to work, thoroughly washing every part of the leaves until they are freed from the pest.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Bulbs.—Beds of Anemones that have flowered, and that have proved to be thin and irregular, may be taken up and replanted at once. Plant them in a fresh piece of ground and apply plenty of leaf-mould or similar material. If a change of ground is needed, Tulips and Hyacinths may also be lifted and sorted into sizes, otherwise they are best left where they are, but should be afforded a good top-dressing of rotten dung or an application of a chemical manure.

Bamboos.—Afford plenty of water to these, especially to those that were planted last spring. Mulch the ground with cow-manure, or ill-effects will follow from the present dry weather.

Hydrangeas.—Afford farmyard liquid-manure two or three times a week to plants flowering in beds.

Spring-flowering Plants.—Wallflowers, Myosotis, Silenes, and other spring-flowering plants will be ready for transplanting on to a cool border. Choose a dull day for this work if possible. Shade the plants if the weather remains very bright, and damp them over each morning and evening. Loosen the surface soil by means of the hoe after a few days, or the ground will get hard through the waterings.

Pæonies.—When the growths have withered cut them off, and fork over the soil lightly, then apply a mulch of good rotten manure, and afford water afterwards if necessary. These remarks will apply to the Moutan as well as to herbaceous varieties. Remove all shoots from the stocks of Moutan Pæonies that appear below the grafts.

Hardy Ferns.—Copious supplies of water will be needed to keep these fresh and green. If the ground is breaking away from the rocks or stumps, some peat-moss fresh from the stables may be rammed firmly down in the crevices. Mulch the ground and apply water afterwards.

Border Carnations.—As the varieties pass out of flower these may be layered in good "sharp" (porous) soil, including plenty of road-scrappings and leaf-mould. The beds or borders will not appear unsightly if the work be done neatly. The layers will make better plants for transplanting in September than if the work be delayed. Afford the plants a thorough soaking with water before commencing the work of layering, and subsequently damp the layers overhead each morning and evening.

Flower-beds.—Stir the surface soil occasionally. Lobelia planted under a wall for effect has been disappointing. Being planted over the roots of the climbers the plants get too dry, and applications of hard water do not improve the flowers or foliage. Pelargoniums still hold their own in a dry summer. Petunias and Tropæolums are among the best hot-weather plants. Verbenas dislike the hot weather, and are dying off. Calceolarias planted early are a blaze of colour; those planted later are a failure.

Magnolias planted against a south wall, and perhaps unfortunately on a bank not wide enough to give the roots proper room, will be losing colour, and if not repeatedly watered will drop their flower-buds; apply liquid farmyard manure.

General work.—Dry weather still prevails here,

and the work of watering is very heavy. The mowing of lawns must only be done when quite necessary, especially banks which quickly show the effects of the machine. It is better to mow them with the scythe in dry weather. If turf which was laid last spring under trees is cracking, afford it a good top-dressing of soil, sweeping it into the crevices previous to affording water. Clean away leaves and other rubbish, and cut grass verges. The lawns being brown and bare, everything must be done to make the flower-garden as tidy in appearance as is possible under the circumstances. To roll walks laid down with Sussex gravel would be waste of time and labour.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

Potatoes.—The haulms of early varieties are ripening fast, and the tubers should not be allowed to remain in the ground longer, or they may become diseased. Choose a fine day, and lift the tubers when the ground is dry. It is an old practice to leave the seed-tubers in the ground or in some exposed place to become green, but I do not recommend it, as I have on several occasions seen tubers which were perfectly free from disease when taken up get very much diseased afterwards by being exposed to the atmospheric changes out-of-doors. It appears only natural that disease should follow if the tubers for any length of time are allowed to remain on wet or damp ground, exposed to all the rain that falls and the night dews, all of which I consider are the agents which assist the spores to develop. Therefore lift the tubers in as dry a condition as possible, and keep them so. Grade them when taking them up, or as soon afterwards as possible, and store the seeds tubers in a dry airy place, preferably on shelves with a lath bottom through which the air will circulate. I strongly recommend a dusting of dry-slaked lime amongst the tubers as they are being stored; it serves to dry up any moisture that may be about, and prevent any spores of the disease that may be present from making growth. Tubers that are fit for table should be stored in a cellar or some convenient place in a heap, and a covering of hay or straw put over them sufficient to exclude wind and light. If wind is allowed free access, it will give the tubers a yellow tint, while much light will cause them to become green; and either will cause them to have an inferior flavour. I also recommend lime to be dusted amongst the tubers to be used for table, when storing them, as it improves the quality.

Seed sowing.—Make a sowing of Cabbages, as was advised in last week's Calendar, if not already done; also sow the varieties of Lettuce All-the-Year-Round, Bath's Black Seeded, Brown Cos, and Hardy Hammersmith. Another sowing of Endive may be made, and Parsley must not be forgotten. If this was not put in as previously advised, it should be sown in beds on which frames can be placed later. It is not yet too late for making a sowing of round Spinach, and a sowing of Onions should be made at once.

THE APIARY.

By EXPERT.

As full sections are removed from the hive those partly filled should be placed to the front to enable the bees to finish them off; this will be found better than placing on more empty sections and a little later on having to remove them only partly filled and unfit for sale. Care should be taken when removing sections not to scratch or mark them in any way, and they should also be kept up the same way that they are removed from the hive and deposited in a place of safety, where the bees and wasps cannot get to them. Care should also be taken in using the smoker that no liquid falls out on to the sections, as they look very bad when stained. Wax-moth will be breeding very quickly now, and should be destroyed. Any stocks which have not done well should be thoroughly looked into and treated according to their necessities. All takes of honey should be recorded to each hive for future reference. Any little sign of robbing should be noticed, and a remedy given. Keep a good supply of "lzal" still in use for dipping dummies, &c.; also for washing the hands.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the **EDITOR**, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUG. 6	{	Soc. Franc. d'Hort. de Londres meet.
		German Gardeners' Club meet. Crewe Memorial Cottage Hospital Horticultural Fête.
TUESDAY, AUG. 9	{	Roy. Hort. Soc. Comms. meet.
WEDNESDAY, AUG. 10	{	Bishops Stortford Hort. Soc. Show.
		Royal Botanic Soc. Anniversary Meeting. Chippenhams and District Hort. Exhib.
THURSDAY, AUG. 11	{	Taunton Deane Hort. Soc. Show.
SATURDAY, AUG. 13	{	Sheffield Hort. Show.

SALE FOR THE WEEK.

FRIDAY, AUGUST 12—Imported and Established Orchids, Bulbs in variety, Retarded Lilliums, &c., at Protheroe & Morris, 67 & 68, Cheapside, E.C., at 12.30 o'clock.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —62°9'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 3 (6 P.M.): Max. 88°; Min. 64°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday (10 A.M.): Bar., 31°4'; Temp., 84°. Bright sunshine.

PROVINCES.—Wednesday, August 3 (6 P.M.): Max. 81°, S.E. Coast of England; Min. 60°, N.W. Coast of Ireland.

The Evolution of Horticulture. THE high position to which horticulture has attained could not have been better attested than by the recent opening by the KING and QUEEN of the new Hall of the Royal Horticultural Society and the character of the assemblage which was privileged to witness it. After many vicissitudes the germ of that Society, originating in the brain of its founder a century ago, has developed into a magnificent organisation universally recognised as fully competent to deal with the varied phases and interests of horticulture as in the process of evolution they present themselves. The history of that Society is already a matter of public knowledge, and we may, therefore, refrain from entering into it here, confining ourselves rather to the consideration of the various factors which have been at work in the development of the cult generally.

First and foremost, of course, we must place those natural processes which have been at work for æons altogether independently of human co-operation. It is these which underlie and

induce variation in type, generally of small degree, but sometimes of very marked character, which by the process of natural selection have led to the evolution of an infinite number of different kinds of plants, which the botanist ranges to the best of his ability under orders,

tion must have been at work to give him any material at all, however humble, to operate upon. With this subtle faculty the vegetable world, to say nothing of the animal, has proved to be as plastic in form as the potter's clay, and as amenable to selection on given

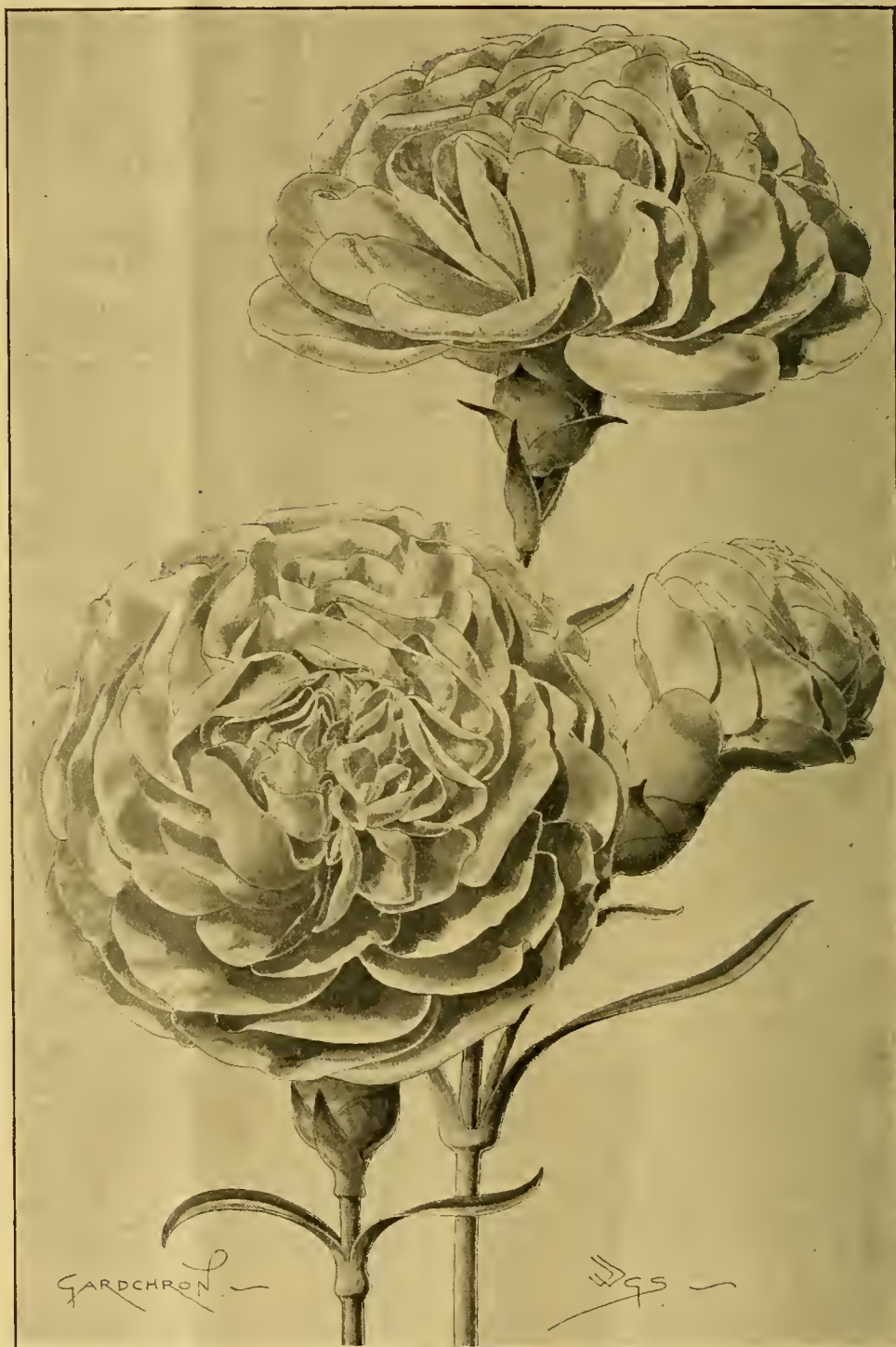


FIG. 41.—CARNATION "LADY CARRINGTON": COLOUR OF FLOWERS SALMON-PINK.
(SEE P. 95.)

genera, and species; and the florist, in these later days, splits up again into an infinity of varieties. Without this subtle faculty of change, man could do absolutely nothing but assist in propagating over and over again the same monotonous types; and, even granting this, we have to assume that at man's advent evolu-

lines as could be desired. A common weed like the wild Cabbage is worked up into a thousand diverse types, nutritive and ornamental; a simple wild and insignificant flower like the normal Chrysanthemum is elaborated into a brilliant galaxy of stately and diverse blooms to form a special cult for scores of societies through-

out the world, and so on. Were the parental features invariably exactly transmitted, both the above examples would still be unattractive weeds, and nothing more; but given diversity and direction by selection, and we have the results aforesaid.

The faculty of variation is then indubitably the first essential, since, like life itself, it is the mani-

equally beautiful flowers developed by absolutely wild and unsophisticated plants, which owe their beauty entirely to some subtle interrelations between themselves and the insect world, whose province it is to fertilise them, and to attract which the beautiful flowers have been shaped, enlarged, and gorgeously tinted. Horticultural evolution as distinct from natural evolution has

and other collections with a view to their propagation and perpetuation. Here, however, comes in the general benefit derived from ever-increasing travelling and transport facilities coupled with a better understanding of exotic plant-needs and improved capacity for meeting them. In the old days explorers often worked in vain, the plants either dying in transit owing to the duration of journey or exposure to low temperature *en route*, or perishing on arrival from defective treatment. The invention of the Wardian case, the shortening of ocean transit, and last but not least the introduction of the hot-water system of warming glasshouses have immensely facilitated the introduction of tender exotics and their subsequent culture on congenial lines. It is to the above causes that we may mainly attribute our present floral wealth; but there is still another essential, and that is supplied by the Royal Horticultural Society, viz., a central body of recognised experts whose province it is to determine what are really improvements and so keep progress within proper lines. It is a human failing to regard one's own geese as swans, and it is due no doubt to this that an immense number of plants annually appear before the Committees only to be rejected, while without such a check the public would undoubtedly be often invited to purchase "novelties" which, if they were really such at all, would be novelties on wrong lines. Evolution in short, especially when hybrids are in question, if without skilled guidance, would result in a chaos rather than in an orderly improvement on higher and better lines; and it is this last and final factor which really received the Royal approval at the opening of the new Hall.

TWO NEW CARNATIONS.—In our last issue we illustrated two new varieties of Carnations, which were exhibited at the show recently held at Holland House. In figs. 41 and 42 we now present illustrations of two further seedlings, each of which is recommended for its good qualities. The variety "Glow-worm" is a bright scarlet-coloured border variety of good form, and possessing non-splitting calices. Flowers were exhibited by Mr. JAS. DOUGLAS, and they obtained an Award of Merit from the Floral Committee. This distinction was not extended to the variety "Lady Carrington"; but we have no hesitation in recommending it, for the flowers possess good form, fine petals, rich salmony-pink colour (almost similar to the "Blush" *Souvenir de la Malmaison*), and, more than all, a degree of pleasing perfume. This variety was shown by Mr. MARTIN R. SMITH, Warren House, Hayes, Kent, to whom we are indebted for the flowers shown in our illustration.

ROYAL HORTICULTURAL SOCIETY.—We have received a pamphlet from the Secretary containing particulars of the Society's Autumn Rose Show to be held on September 20, the great Autumn Show of British-grown Fruits on October 4, 5, and 6, and the Show of Colonial-grown Fruits and of Preserved Fruits on December 13 and 14, 1904, all to be held in the Royal Horticultural Hall Vincent Square, Westminster.

GLOXINIAS.—Every now and then some correspondent sends us specimens of Gloxinias with a double bloom, a supplementary corolla emerging from the outer surface of the first. The condition is very variable—sometimes only a lobe or two is thus formed, at other times the lobes cohere into a complete double corolla, the colouration, which is inside in the ordinary corolla, being reversed in its position in the supplementary one. The condition is figured in *Vegetable Teratology*, pp. 451 and 452, and at the time of the publication of that volume the condition was so "fixed" that a "strain" of such flowers was produced and was offered in commerce. Since that time the strain has died

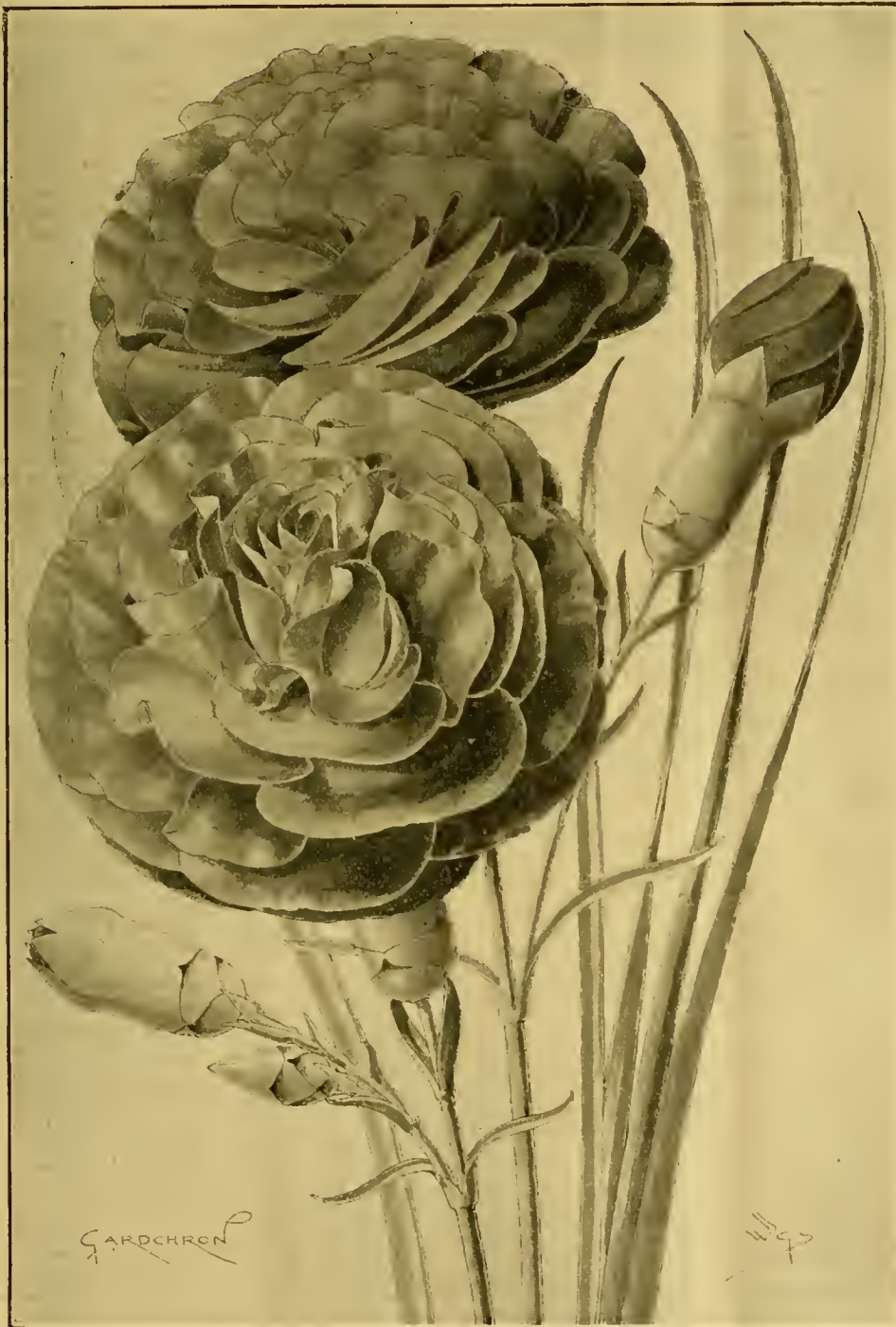


FIG. 42.—CARNATION "GLOW-WORM": COLOUR OF FLOWERS SCARLET.

festation of the Creative power and the Creative ideas which we symbolise by the term nature. Variation under selection nowadays plays probably the more prominent rôle in horticultural evolution, especially when combined with hybridisation; and the great majority of the beautiful flowers now exhibited are due to this. We must, however, by no means ignore the

been dependent also upon other factors than those named.

Our flower-shows nowadays comprise plants from all parts of the world, and, as we know, the Royal Horticultural Society has played an important part in such introductions by sending out a small army of investigators to likely regions, and distributing their discoveries to national

out, save for the occasional occurrence of specimens such as we have alluded to. Messrs. PARSONS, of Swansea, now send us pure white flowers of this character, which they tell us are reproduced from seed, and come very true and regular. No doubt by continued selection improvements will be effected.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—"At a meeting of my Committee, held on the 22nd inst., the following resolution was unanimously adopted, which I was desired to forward to you: 'That the best thanks of this Committee be tendered to the *Gardeners' Chronicle* for its unvarying kindness to the Institution at all times, and more especially in connection with the recent successful and record anniversary festival dinner in aid of the funds.' GEO. J. INGRAM, Secretary."

YUCCA GLORIOSA.—We hear from various quarters of the flowering of this noble shrub. To Mr. WARRENDER, of Pinuer, we are also indebted for a photographic representation of two fine specimens; but, in view of the fact that similar illustrations have frequently been given in these columns, it is not necessary to repeat them.

KHARTUM.—The associations connected with this desert city are sad and grim. Lord KITCHENER, who rescued the country around from savagery, proved himself as great at construction and organisation as he was in military operations. An illustrated article in *Le Jardin* is devoted to the city of Khartum, which, thanks to the constructive tendencies of KITCHENER, is now a fine city, planted with trees and suitable as a resort in winter. The embellishment of the city was confided to a French gardener, M. DEKON, who immediately on his arrival had 30,000 men placed at his disposal, with instructions to proceed with all speed. Ruins were cleared away, the ground levelled, streets cut, lined with Acacias (*Albizia Lebbeck*), and gardens formed. Amid the Date Palms are fine specimens of *Araucaria brasiliensis*, Cypresses, *Pinus australis* and insignis, and many others which do not resent the heat and drought to which they are subjected. Thus Khartum, which used to stand for murder and rapine, is now a centre of civilisation and enlightenment.

EARLY POTATOS IN IRELAND.—We are glad to find that in County Cork successful attempts are being made in the cultivation of early Potatos for the English and Scotch markets. The returns for the present season vary from £40 to £80 per acre.

FLOWER SHOW AT SANDRINGHAM.—The annual show of the Sandringham Estate Cottage Horticultural Society attracted 7,000 people to the King's Norfolk home on the 27th ult. Many excursion trains from considerable distances arrived at Hillington and Wolferton crowded to the utmost capacity, while on all the roads leading to Sandringham were endless processions of waggonettes, motors, and other vehicles. By the King's permission, the show was held in Sandringham Park, and the whole of the grounds, greenhouses, and gardens were thrown open to the public, a concession that was highly appreciated.

YEAR-BOOK OF THE UNITED STATES DEPARTMENT OF AGRICULTURE, 1903.—This is a monument to the industry of the editor, Mr. G. W. HILL, and his assistants, Messrs. B. STALLINGS and GREATHOUSE. The Department has extended its work in all parts of the country during the past year, and has directed active efforts to the stamping out of foot-and-mouth disease in some States; to studying the Cotton-boll weevil elsewhere, and to demonstrating the growing of Cotton successfully in spite of the

presence of the pest. Encouraging progress has been made in all the lines of research with which the Department is charged. The work of the Bureau of Plant Industry has been pushed with vigour in all branches. Forestry has been especially studied, and the experiment stations have proved highly successful in the various districts. In addition to the reports there are herein included many (illustrated) papers on such subjects as Soil Management, Cultivation of Corn, Cold Storage of Apples, New Fruits, Drug Plants, and other agricultural matters. The volume also includes various tabulated statistics of the crops of the past year.

GRASSES.—M. L. LEWTON BRAIN has lately published in the *Transactions of the Linnean Society* a valuable paper on the leaf-anatomy of British grasses, showing how the structure may be modified by the conditions under which the plants are growing, and how the several species may to a certain extent be distinguished one from another by different structural arrangements.

'FLORA CAPENSIS.'—Another part of this work, edited by Sir W. T. THISELTON-DYER, has been published. It contains an instalment of the *Scrophulariaceae*, elaborated by Mr. HIERN.

"BOTANICAL MAGAZINE."—The August number contains coloured figures and descriptions of the following plants:—

Zingiber spectabile, Griffith, t. 7967.—A very curious and handsome Malayan species, with dense flower-spikes of golden-yellow bracts, from the axils of which proceed orange-spotted flowers. Kew.

Vanda pumila, J. D. Hooker, t. 7968.—A pretty, free-growing Orchid, with deliciously fragrant flowers. The flower-segments are greenish with purple spots, the lip whitish with purple and yellow stripes. Native of Sikkim. Flowered at Glasnevin.

Thunbergia primulina, Hemsley, t. 7969.—A curious and beautiful species from East Tropical Africa, with palmately-lobed hairy leaves. The yellow corollas are singularly like those of a Primrose. Kew.

Tecoma shirensis, Baker, t. 7970.—A Tropical African shrub, with unequally-pinnate, nearly glabrous leaves and terminal racemes of irregular curved flowers, the yellow corollas of which are marked with scarlet stripes.

Euphorbia viperina, Berg., t. 7971.—A singular-looking species, with long snake-like cylindrical stems, studded with fleshy tubercles, but without spines. South Africa.

SWANLEY HORTICULTURAL COLLEGE.—An address at the inauguration of the "Nature-study Course" was given, on the 1st inst., by Sir JOHN COCKBURN, from which we extract the following:—"The introduction of Nature-study, together with manual training and a knowledge of modern geography, was transforming the curriculum, and, by sharpening the intelligence and cultivating mother-wit, was enabling ordinary book lessons to be more quickly assimilated, thus proving a labour-saving device in education. The method of Nature-study was not analytical, but dealt with everything in its proper environment, as—

'parts of a stupendous whole,
Whose body Nature is, and God the soul.'

The child-mind was not scientific, but imaginative and artistic, like that of prehistoric man. Unnecessary terminology should be avoided. The proper sequence of apprehension was first the thing itself, then its image, last its verbal sign or name. A well-devised label was, however, often an indispensable convenience. Nature-study formed a fitting introduction to books, which should always be regarded as explanatory and supplementary, never as

primary. The best and most beautiful book of all was the book of Nature, called by Longfellow "the manuscript of God." Nature-study struck one of the keynotes of true education, for it riveted attention and excited interest; the mind thus aroused could easily be led in any direction. The teacher should be a fellow-observer, and after leading up to the point should permit the child to have the full joy of discovery. Nature-study furnished excellent physical, intellectual, and moral training. With more Nature-study there would be less need of enquiries into the causes of physical deterioration. Moreover it inculcated the love of country life. City crowding had formed a necessary stage in social development. It promoted solidarity and urbanity, but it was only a passing stage. There was grave national danger in an undue rush of population to the centre. Rome died of apoplexy, and Nature-study came as the herald of a more normal and healthy existence. It therefore had a special patriotic significance, and the County Councils were to be commended for the manner in which they encouraged it."

ENQUIRY INTO DECIMAL COINAGE AND THE METRIC SYSTEM.—The purport of this pamphlet is indicated in its long title: *An Enquiry into and an Explanation of Decimal Coinage and the Metric System of Weights and Measures*, by EDWIN ANTHONY. "The conclusion to be drawn is that our weights and measures may be decimalised without great dislocation, and a system produced which is practically equal if not superior to the metric system." As regards coinage: "Decimal coinage can be introduced quickly and easily by issuing one new gold and one new silver coin, and without withdrawing any of the coins at present in circulation." We hope that some day our antiquated and cumbersome systems may be superseded by the simple and more practical decimal system; but the advance is one which those in authority seem strangely slow in encouraging.

ROSE-GROWING.—Under this title Mr. D. GRANT McIVER has published a small and thoroughly practical treatise on Rose-growing and propagation. It is intended especially for amateurs, and may safely be commended to their notice as containing in plain language, devoid of sentimentality, just what the beginner wishes to know. The illustrations of certain varieties of Roses would have been better omitted, as they occupy space which might have been better filled. The publishers are Messrs. DAWBARN & WARD.

THE CLIMATE OF THE TRANSVAAL.—The occurrence of severe frosts in the Transvaal will come as a surprise to many; yet a correspondent writing in June says he is busy with burst pipes and taps, and sends us the following records:—June 11, temperature 8° F., or 24° of frost; June 12, temperature 11°, or 21° of frost; June 13, temperature 18°, or 14° of frost. Our correspondent has had experience of Canadian winters also, and cites for Winnipeg in January, 1899, 48° below zero F., = 80° of frost!

ORNITHOGALUM THYRSOIDES.—This plant has been found to be extremely poisonous to horses in Cape Colony, producing symptoms of inflammation of the intestinal canal.

DAHLIAS.—Those who are interested in the culture of Dahlias, and who are conversant with the French language, will find it profitable to peruse a little treatise on the subject by M. VAN DEN HEEDÉ, of Lille. After a summary of the history of the flower—which, if we remember aright, differs somewhat from that current in this country—M. VAN DEN HEEDÉ goes on to give cultural details. In this way the reproduction from cuttings or from seeds, the planting, staking, and the care to be bestowed on the plants, are dealt with, as well as the cultivation in pots and the diseases to which the plant is

subject. Lists of the most desirable varieties in the several sections, as well as a monthly calendar of operations, are given.

EVESHAM.—The late rains have been beneficial to the fruit crops in this district. In order to check the falling of Plums, a steam fire-engine was made use of with advantage. Market-garden produce has suffered considerably, but the late rains may remedy matters.

"FLORA AND SYLVA."—The August number of this periodical *de luxe* contains an article on Strawberries, with the general principles of which most gardeners must concur. The Strawberries which find favour in the market are not those which are of the first quality as regards flavour. A similar remark applies to Peas, Tomatos and other crops. The grower looks to what will pay rather than to intrinsic excellence. It is not a case of survival of the fittest in the abstract, but of the concrete survival of that which is the fittest for a particular purpose. We do not think Sir HENRY THOMPSON'S dietum will meet with universal assent, and no evidence is given to support it, whilst it is certainly opposed to the tradition that LINNÆUS cured himself of gout by the use of Strawberries; but then these were not the market varieties we know. Mr. CARL PURDY has a useful monograph on Californian Erythroniums, and Mr. O'BRIEN a similar article on Gloriosas.

STRAWBERRIES.—As our reports have shown, the crops generally have been very heavy; and now we hear of 80 tons being despatched on one evening from Wisbech; and one grower is recorded in the *Daily News* as having sent off 24 tons in one day.

NEW PLANTS.—Not content with the publication of figures and descriptions of the living plants in his garden at Tirlemont, Belgium, M. VAN DEN BOSSCHE has now undertaken the publication of a similar work, intended to illustrate the riches of his herbarium. Under the title of *Plantæ novæ vel minus cognitæ ex herbario horti Thenensis*, M. DE WILDEMAN has edited a series of descriptions with the critical judgment of which he has given so many proofs, and beautifully illustrated by lithographic plates by M. A. D'APREVAL. In the part before us are figured *Kigelia Ikalie*, De Wildeman, t. i.; *Cissampelos Wildemaniana*, V. d. Bossche, t. ii.; *Heinsenia Lujæ*, De Wildeman, t. iii.; *Oncolea angustipetala*, De Wildeman, t. iv.; *Gladiolus morrumbalaensis*, De Wildeman, t. v. The five new plants now figured form part of the collection made in Mozambique by M. E. LUJA.

NEPENTHES.—From M. JARRY-DESLOGES we have received a selection of pitchers of various forms of *Nepenthes*, grown at his residence in the Ardennes, which are extraordinary for their size and splendid colouring. Among them are:—

N. NORTIANA, with a curved horn-like pitcher of a rich claret-red colour, heavily blotched with deeper coloured spots, tapering at the base, gradually dilating upwards, about 1 foot (31 cent.) long, exclusive of the lid. The midrib is prolonged at the apex, at the back, into a short, thick unbranched process. The wings are narrow and fringed, and are deeply recurved, margin or rim (3–4 cent.) undulate, lobed, finely striated, and marked with alternating blotches of greenish-yellow and deep red. The interior of the throat, exposed by the raising of the lid, is green, heavily blotched with reddish-purple. Lid 13 cent. by 10 cent., broadly oblong, pale green, heavily blotched with reddish-purple.

Two other forms are similar to the preceding, but with smaller and distended pitchers, whose reflexed margins are gorgeously coloured with various shades of orange and red:—

N. BALFOURLIANA.—Pitchers about 1 foot (31 cent. long), tubular, slightly curved, green, with a few purplish spots near the top; wings narrow, ciliate; rim recurved, 5–8 cent. deep; undulate, lobed, finely striated with alternate stripes of red and green; midrib excurrent at the apex beneath the lid into a pin-

nately branched slender process; lid 9–10 × 8–9 cent., greenish spotted; upper part of throat green, heavily spotted with red.

N. SANGUINEA.—Pitcher about 10 inches (25 cent.) exclusive of lid, dilated in the centre, tapering to each end finely, puberulous, deep red without blotches, midrib, prolonged at the apex at the back into a long, slender, tendril-like process 3 cent. long; wings narrow, with long, ciliate margins; rim narrow, recurved, finely striate, uniformly red; interior of throat glaucous, grey, with a few purple and yellow spots; lid 8–9 cent., self-coloured red.

FLOWERS IN SEASON.—From MESSRS. KELWAY & SON, of Langport, we have received a box of their Gladioli, the quality of which is too widely known to render it necessary for us to dilate upon them. Among the more remarkable are:—

Amphora.—Flowers nearly regular; segments rounded, snow white.

Mrs. F. Field.—Segments pointed, white.

Kenrygn.—White flaked with rose-pink.

Morris Dancer.—Scarlet flaked with white.

Batrice Kelway.—Rose-pink flaked with pink, and with a central white stripe.

Happy Match.—Three outer segments and inner upper segment rose-pink with a central white stripe; two innermost segments smaller, recurved, primrose-yellow edged with pink.

Arct. Patrick.—Flowers large, outer segments broad, deep rose-pink; two inner segments smaller, deep rose, with a central white stripe.

GUIDE-BOOKS RECEIVED.—*Orsted, Limpsfield, and Edenbridge*, The Homelands Handbooks, Vol. 36 (22, Bride Lane, Fleet Street, E.C.); an interesting and well-illustrated guide-book, rendered more useful by the addition of an Ordnance map.—*Holidays on the South Coast and the Isle of Wight* (London, Brighton & South Coast Railway); a pamphlet with illustrations, and written in German, French, and English in parallel columns.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

MR. CHAPMAN'S NURSERY AT ST. NINIANS.—I have read the account of hardy plants at this Scottish nursery, from the pen of Mr. S. Arnott, on p. 50. The short-lived splendour obtained from the method of massing tender exotics is absent in flower-gardens planted wholly with hardy plants, some of which do not bloom for more than a month or two at the most. But this feature is readily got over by employing mixtures of different species in the beds in contradistinction to one bed of one species, the former method being now generally followed, unless it is desired to obtain the finest display at a given period of the summer or autumn, in which case the plants chosen must be those that are in the best condition at the particular season. Once planted, such hardy herbaceous perennials need not be disturbed by the gardener more than once in three or four years, excepting in the case of very vigorous or wide-spreading species, or for the purpose of substituting some other more suitable ones. Those who put the massing of bright colours in flowers first, will perforce still employ the older mode of planting with comparatively tender plants, which succumb to the first sharp autumnal frosts, leaving the beds bare of vegetation, unless spring-flowering bulbs, Wallflowers, *Myosotis*, *Honesty*, *Saponaria*, *Silene*, *Pansies*, *Aubrietias*, *Heucheras*, procumbent *Phloxes*, &c., are planted in the beds in the month of October. Mr. Arnott makes mention of several plants succeeding satisfactorily so far north as Stirlingshire which are usually considered as being rather tender. Of such I may indicate the *Veronicas*, *Olearias*, and *Escallonia Phillipiana*. Perhaps he will kindly state if these, and *Platycodon grandiflora*, *Incarvillea Delavayi*, *Chryso-gonum virginianum*, *Statice latifolia*, and *Eno-thera M. Cuthbertson*, are safe out-of-doors without protection. In regard to *Buddleia globosa*, this showy shrub is, if sheltered from the north and east winds, quite hardy in cold localities in all parts of England, and consequently in West Scotland; whilst *Ribes speciosum*, on the contrary, requires covering as a protection against frost, even when planted on east or west walls, otherwise it flowers sparsely or not at all. It was my practice to cover the entire plant (in that

instance 16 by 10 feet) with ripe *Asparagus-haulm* 4 inches thick, with bast-mats over all, making the covering thicker over the stem and root-stock. Any information afforded by the writer with regard to soil, aspect, propagation, and hardiness, is especially valuable to would-be cultivators of little-known species, and for such many readers of these pages would be very grateful. F. M.

ROSE PAPILLON.—This vigorous-growing Tea Rose, distributed by Nabonnand in 1882, is one of the best of the climbing Tea section. It is exceedingly free and continuous in blooming, being one of the earliest to flower here, and continues to bloom as freely as ever when most other climbing Roses are passing out of flower. I have counted twenty to forty blooms on a single truss, each individual flower measuring 3 to 5 inches in diameter. The colour is a coppery-salmon-rose, the coppery shading coming out very prominently towards the base of each petal, and gradually lightening out to blush towards the edges of the flower. The shell-shaped petal enhances its beauty. Grown as a pergola Rose here it is a great success; but either as a pillar Rose or for covering a wall or fence it would prove equally good. W. H. Clarke, Aston Rowant Gardens, Oxon.

CLIANTHUS PUNICEUS.—On p. 26 Dr. Bonavia, under the heading of "An Interesting Phenomenon," speaks of this *Clianthus* throwing out flower-buds in November, and also refers to a note written by me which appeared on March 5, recording its being in flower at Penzance early in February. With me at Kingswear, South Devon, *Clianthus puniceus* is very precocious, for a plant about 10 feet high, growing against a south wall, has for the last three years produced its first flowers just before Christmas. From that time a few blossoms were always to be seen on the plant, these increasing in number through the months of March and April, and in the first week of May forming a sheet of scarlet. At Penzance at the beginning of February I saw a plant growing against a wall bearing a dozen fully expanded flowers, and a few days later I met with a bush specimen growing in an open bed, with no wall in its vicinity, which held three or four fully-open blossoms. The white-flowered variety, which is growing on the same wall as the type, flowered with me in April. It was literally covered with budding flower-racemes, of which, as it is a small plant, I removed all but six at an early stage of growth. The flowers of this form are not snow-white, but have a suspicion of faint yellow in their colouring. They afford, however, a charming contrast to the scarlet colour of the type. S. W. Fitzherbert.

MOTORS AND MANURE.—In the *Gardeners' Chronicle*, p. 63, your ever-vigorous correspondent, Mr. "A. D.," appears to have had a kind of nightmare over the shortage of manure which he fears will happen in the course of a few years, when 20,000 or more horses will have to give place to make room for so many of those non-manure-producing motors. This mantle of pessimism which Mr. "A. D." appears to have put on is very different from that which we have been in the habit for a long time of having from his facile pen, and we hope it will only be of temporary duration, and that he need not trouble himself as to where farmers, gardeners, and market gardeners are to find their indispensable manure say twenty years hence or thereabouts. Surely this is one of those cases where we might look for some crumb of comfort in the old proverb—viz., that "Sufficient unto the day is the evil thereof." When years ago it was seen that our railways were likely to come into general use, it was feared that horses would be displaced. Quite the contrary happened; they were in greater demand than ever; and I fancy we are yet a long way from the time when we are to see the last load of stable-litter being drawn out of London. Expensive motors are just now the rage amongst the wealthy classes, but when the novelty of the fad wears off—and this may be hastened when a few more serious accidents have been added to those which have already happened—it is not at all improbable that then there may be a perceptible

hull in their dangerous use, followed quickly by a general return to the by far safer and more dignified equipment of a handsome carriage-and-pair, to which no motor that I have yet seen can be compared. True, their speed is enormous, but they are dangerous in the extreme. Accidents, when they happen, are so sudden that a moment of time is often all that is between life and death, yet all this is risked, and the wish is to go faster still. Any day, and the sooner the better, we may expect to hear a cry raised in high places to put a stop to the dust and smoke left behind on the roads by the passing of those hideous monsters of locomotion. When this much is accomplished, their speed reduced to something like safe limits, and the people's comfort safeguarded, their use may then be tolerated. But for commercial purposes both steam and petrol lorries for heavy haulages have come to stay, and they have already done more towards reducing exorbitant railway charges than all the written remonstrances which from time to time have been addressed to the respective railway companies. Heavy goods are loaded up from various factories with just half the handling which would be the case were they sent by rail, without delay and without breakages, always a source of trouble and annoyance. But running the risk of occupying too much of your valuable space, is it not a fact that many [some] of the larger market gardeners and fruit-growers have already adopted either the steam or the petrol lorry? If so, they have practically put themselves out of court, and have no *locus standi* to make complaint against anybody else's making use of any form of Mother Shipton's horseless carriages. If this is the case, the shortage of manure at some remote period does not appear to give them much concern; and nightmares as to what will happen twenty years hence are not likely to disturb their slumbers. *W. Miller, Berkswell, July 25.*

POLYGONUM BALDSCHUANICUM.—This distinct species, which is one of our most beautiful flowering plants, is proving hardy and well adapted to our Scottish climate. At Kyle Villa, Davidson's Mains, Mr. Porter has a large established specimen on a southern aspect of his house, which from early June till autumn produces most profusely long trails of its peculiarly-tinted whitish flowers. A native of Eastern Bokhara, one feels naturally sceptical about introducing to prominent places a plant of this kind, but it has only to be seen to secure a welcome. For decorating purposes as a cut flower it is at once distinct from all others and very suitable. Mr. Porter grows many other good things not usually found in gardens. Fortin's giant Lily of the Valley, for instance, is thriving immensely both in the villa garden and in a larger one in the immediate vicinity, where beds of it are grown, its large, dock-like foliage being proportionate to the immense spike of flowers it produces in season. *B.*

POLLEN STEALING AGAIN.—Allow me again to bring this forward for the sake of other people. At Holland House show I bought of Mr. Sander a fine variety of *Cochlioda Noezliana*, having previously seen that its eighteen blooms contained all the pollinia. The plant was on show for the two days, and was then and there wrapped in paper and handed to my son. On arrival here I found only seven pollinia remained (and some of them in unopened buds at the tip of the spike). Of course, now that *Cochlioda* has become so valuable as a parent of a new coloured race, it is a cheap way of obtaining its pollen; but if the thief gets his deserts his fertilised plant will die under the pods. Publicity at any rate will not enable him to proceed so easily next time. *De B. Crawshaw, Sevenoaks.*

PEAS.—If your correspondent, J. G. Wilson, would try Sutton's Early Giant Pea he would find it equal in every respect but one to Gradus. I have often counted eleven Peas in a pod, and its cropping capabilities are equal to those of Gradus; but sown at the same time it comes in about one week later. I should be very glad if J. G. Wilson could tell me what methods he uses to get early Peas in twelve or fourteen weeks; I mean, of course, in the open ground. I sowed the variety Sutton's Harbinger on February 2, and thought I did well to gather Peas the first

week in June. If there is any method or variety of Pea to come in sooner I for one should be glad to hear of it. *S. G. Smallridge, Holfield Grange Gardens, Coggeshall, Essex.*

STRAWBERRY LAXTON'S "THE LATEST."—This has proved with us a most valuable late variety, the first fruits ripening on July 13 and the last on July 29. Some of the berries were very large, measuring as much as $6\frac{1}{2}$ inches in circumference. The colour is deep red; the flesh firm and of first-rate flavour. The colour and solidity remind me of the old Elton Pine, but "The Latest" is free from the objectionable acidity of the older variety. The habit is compact, and the constitution appears to be good judging from the manner in which my plants fruited, although they were very small when received on October 20 last season. I consider this to be the finest introduction in Strawberries since the variety Royal Sovereign was introduced. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

THE PINES OF WESTERN CUBA.—Since writing the description of the Pines of Cuba, *Gardeners' Chronicle*, March 19, 1904, my attention has been called to an article by M. Arthur Morelet, *Bull. Soc. Hist. Nat. Moselle*, vol. vii. (1885), pp. 97—101, in which two new Pines discovered by the author in Western Cuba and the Isle of Pines are described as follows:—

P. TROPICALIS (Nob.).—*P. foliis geminis, sub decem pollicaribus, glabris, multistriatis, dorso convexis, facie concavis, marginibus tenuissimè serrulatis; vagina membranacea, brevi, griseo-albescente, rami versus apicem patentes; ramuli crassi, rigidi, squamosi, valde resinosi; gemmæ squamis lanceolatis rubescentibus longissimè ciliatis; strobilus pendulus, parvus, ovoideus, brunneo-lutescens, squamis, depresso-pyramidalis. Crescit in insula Pinorum nec non in littore meridionali insulae cubensis.*

P. CARIBÆA (Nob.).—*P. foliis ternis, sub octo pollicaribus, acerosis, triquetris, sub lente seriatis punctulatis, marginibus tenuissimè serrulatis; vagina rufescente, brevi; ramulis cinerascensibus squamæ tenues adnate; gemmæ angustæ, elongatæ; strobilus pendulus, parvus, ovoideus, sordide cinerascens, squamarum umbone valde depresso. Crescit in insula Pinorum.*

Pinus tropicalis is identical with *P. tortuocarpa*, Shaw; and Pinus caribæa with *P. bahamensis*, Griseb. Morelet's names antedate all others for these two Pines, and should be substituted for the names now current.

The cones of *P. tropicalis* are erroneously described as pendent. On approaching the trees the contrast between the pendent cones of *P. caribæa* and the patulous cones of *P. tropicalis* is so obvious that the local carpenter who guided me to the Pines called attention to this character as an infallible means for distinguishing the two species.

No mention of Morelet's names can be found in the *Index Kewensis*, and they seem to have been overlooked in all monographs of the genus Pinus. *George Russell Shaw, Boston, U.S.*

MELONS.—I enclose a photograph of a house of Melons grown in 15-inch pots, every alternate pot containing two plants. The variety of Melon shown is the result of a cross between Messrs. Sutton's Royal Favourite and the old Guernsey Al White Flesh. I have grown this seedling Melon successfully for five years. The soil is a somewhat adhesive yellow loam. I use no stable manure, but the following chemical manure: sulphate of ammonia, one part; sulphate of potash, one part, and superphosphate of lime, three parts. The whole is mixed together and used in the process of watering. The fruits of this Melon are beautifully netted when ripened, and in colour are golden yellow. *Alfred Hannis, Gorseland Vinery Cottage, St. Andrews, Guernsey.* [The photograph showed an excellent crop of large-sized fruits. Ed.]

PLANT PORTRAITS.

ACACIA BAILEYANA.—*Revue Horticole*, July 16; *Gardeners' Chronicle*, 1894, i., p. 37, f. 4.

ANACAMPSEROS FILAMENTOSA. *Sims.*—*Icon. Select. Horti Thensis*, v., t. elxi.

CALOTHAMNUS QUADRIFIDUS. *R. Brown.*—*Icon. Select. Hort. Thensis*, t. clxii.

LAVIA CALLIGLOSSA. *Asa Gray.*—*Icon. Select. Hort. Thensis*, t. elxiii.

PHARBITIS LEARII. *Lindley.*—*Icon. Select. Hort. Thensis*, t. clxiv.

LINDENBERGIA GRANDIFLORA. *Benth.*—*Icon. Select. Hort. Thensis*, t. clxv.

BOOK NOTICE.

MISS ORMEROD.*

Even a superficial glance at this book affords some idea of the immense amount of work accomplished by Miss Ormerod during the seventy-three years of her useful life. Endowed with uncommon ability and persistency, she mastered several languages; whilst her energy as an investigator, writer, and artist, her special study of insects injurious to stock and crops, placed her in the first rank of economic entomologists, and gave her a unique position as a go-between the severely scientific expert and the practical cultivator.

The very interesting autobiography gives an account of her youth, and tells how the appearance of a rare locust had much to do with arousing her interest in insects. Soon after this Miss Ormerod began seriously to study entomology; to catch specimens, examine them microscopically, and identify them as far as possible.

In 1877 a characteristic book was published, entitled *Notes for Observations of Injurious Insects*, wherein "I suggested," says the writer, "how much a series of observations in relation to insect ravages on food-crops was to be desired; this not merely for scientific purposes, but with a view of finding means for lessening the amount of yearly loss which tells so heavily on individual growers, and also on the country at large." This, though not the first entomological treatise published by Miss Ormerod, gave the key-note to her life's work. Further reports on injurious insects were constantly published, and her leaflets concerning the Warble Fly, Pea Weevil, Crane Fly, and many other pests, had an extensive circulation among agriculturists. Miss Ormerod was for ten years consulting entomologist to the Royal Agricultural Society, and her work in connection with this, added to her lectures and the preparation of her books for publication, occupied her time very fully. Her ample means enabled her to work without thought of remuneration, and she found leisure for a voluminous correspondence, not merely relating to business, but with the many friends who appreciated her social qualities.

No notice of Miss Eleanor Ormerod would be complete without mention of her elder sister, Miss Georgiana, an excellent artist and valuable collaborator, whose death in 1896 made a great blank in the home-life.

It was in 1900 that the University of Edinburgh conferred upon Miss Ormerod the honorary LL.D.—a distinction which she highly appreciated, as is evidenced in the work before us. Her letters on the subject afford an insight into her character, and show how genuine was her delight at this public recognition of her services.

The autobiography before us should serve to still further increase public interest in Miss Ormerod and her work. Details of her home-life, many family portraits, views of the author's homes, &c., help towards a fuller understanding of her career. It need hardly be said that the correspondence included in this volume will be read with great interest by specialists, while the reminiscences of country-life in times gone by will appeal to the general reader. The plan adopted by the Editor in arranging his materials is somewhat confusing, and has led to some repetition; nevertheless, the reader will acquire a very good idea of the intelligence, industry, disinterestedness, and humour of a very remarkable personage. Those who are interested in the study of heredity and the transmission in families of more than average ability, will find much material ready to their hand in these pages.

* Eleanor Ormerod, LL.D., *Economic Entomologist*. Autobiography and Correspondence. Edited by Robert Wallace. With portrait and illustrations. (London: John Murray, Albemarle Street.)

THE OPENING OF THE NEW HALL.

The opening of the Royal Horticultural Hall, built to commemorate the centenary and for the better accommodation of the shows of the Society was a unique event in the history of horticulture. Yet a far greater and more enduring testimony to the Society's labours and exertions during the past century is to be found in the improved methods of cultivation, and in the many new kinds of fruits and vegetables, flowers and plants, trees and shrubs, the introduction of which we owe to the Society. To many of these we have become so long accustomed that we have forgotten to whom we owe the pleasures that we derive therefrom.

The work of the Hall Building Committee has, as we know well from past experience, been one of arduous and often anxious labour from the

articles of necessity, which the Society has endeavoured to improve and to multiply.

Ornamental gardening was regarded by the Society as a second or subordinate department of its pursuits. But utility, as manifested in the production and improvement of vegetables and fruits and the introduction of new ones, remained its chief and primary designs. The most common vegetables, the Cabbage, the Potato, and other esculent plants of the cottage garden, have received no less attention than the rarest productions of the earth. As a result the whole of the contents of our gardens have been changed.

There are few, if any, prominent names associated with British Horticulture during the last hundred years which are not also linked with that of our Society. Founded by men like John Wedgwood, William Forsyth, and Sir Joseph

over, gave their lives [in the prosecution of their search for new plants and varieties. The new additions and fresh importations received from them have added more than anything else to the wealth of beauty which may be enjoyed in both the public and private gardens of our country. The new plants thus discovered in almost every part of the four continents, and other importations of the Society, were all first grown at or introduced to Chiswick, and from thence distributed over the British Islands, our foreign possessions, and other places abroad.

We hear, too, of the possibilities of a horticultural research station in the near future, and it is, indeed, high time that such a station should be erected in England. Foreign countries have already numerous stations of this kind where botanical laws of nature are thought out, questions



FIG. 43.—THE INTERIOR OF THE COUNCIL-ROOM IN THE NEW ROYAL HORTICULTURAL HALL, OF WHICH A DESCRIPTION WAS GIVEN IN OUR LAST ISSUE.

(From a drawing kindly furnished by the Architect.)

time of their appointment until now, when we see the outcome of their efforts. We rejoice that a large part of the Building Fund has already been subscribed, and we shall hope shortly to hear that the balance required has been supplied. It would indeed be a general calamity if the Society's work were to be crippled by having to pay this sum from its income, already none too large for its manifold and national objects and exertions. Any reduction of capital would obviously bring with it a corresponding reduction of income, and consequently a curtailment of the Society's usefulness.

Comprehending horticulture in its widest extent, yet not interfering with matters which more properly belonged to botany or to agriculture, the Society from the first took under its care all the variety of produce which the garden can yield as food and sustenance to man. And very soon many of such productions, which had formerly been objects of enjoyment, became

Banks, it also owes more than we can imagine to Thomas Andrew Knight, whose eminent talents and profound and extensive knowledge of vegetable nature, combined with his devotion and attachment to the Society, proved singularly beneficial to its interests. It was also largely due to his valuable physiological and practical papers in the *Transactions* that amateurs as well as gardeners began to take a higher and more extended view of that science, which now forms the amusement of the one and the occupation of the other.

Many of the Society's intrepid collectors will always be remembered by the trees and plants named after them, and to one especially, Robert Fortune, our empire in India will ever be indebted for the introduction of the Tea industry from China. Don, Forbes, McRae, Potts, Parkes, Hartweg, and Weir, and more than any other, Douglas, form a list of names of which any Society might be proud; most of whom, more-

of vegetable physiology are investigated and new discoveries are made as to the effect on plants of light, electricity, atmosphere, and other matters. The initial cost of the station and part at least of the endowment for its annual upkeep and staff should be provided by those who will profit in their business and in their gardens by the results of the investigations there conducted.

It pleases us of the British Empire to think of how the Royal Horticultural Society has served as a model for similar associations in different parts of the world, and that it is still recognised as the leading horticultural institution at the opening of its second century of public work and utility.

The Journal of the Society, first published in 1807, was the pioneer of the many publications devoted to horticulture which are now issued at weekly, monthly, or longer intervals. Yet the Society's Journal is still one of the most valued of the many privileges of the Fellows. S.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 26.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair); Messrs. Odell, Hooper, Saunders, Douglas, Gordon, and Bidgood; Dr. M. C. Cooke, Prof. A. H. Church, F.R.S., Revs. W. Wilks and G. Henslow (hon. sec.).

Aspen Poplar with galls.—Mr. ODELL showed branches on which the globular galls of *Eriophyes pustulatum* were remarkably abundant.

Solanum guatemalense.—Mr. SUTTON exhibited fruiting plants of this species. The egg-shaped fruit is known as the "Melon-Pear." These are remarkably juicy, cool, and with a distinct flavour, suggesting the name.

Heath malformed.—Mr. KITSON, of Newton Abbot, sent flowers of the common Heath, with the petals free, and only four stamens opposite the sepals, which were subpetaloid.

Carnation sport.—Mr. ROBERTS, of Croxley Green, Herts, sent a stem bearing two flowers, one a self rose-coloured flower, and the other an ordinary bloom of Lottie Collins, from a plant layered last year from the latter. The sport may possibly be a reversion to the rose-coloured flowers of the wild *Dianthus caryophyllus*.

POTTERS BAR AND NORTHAW COTTAGE HORTICULTURAL.

JULY 14.—The thirty-fifth annual exhibition of this very popular Society was held on the above date in the lovely grounds of Mr. A. M. Nathan at Little Heath Wood. The weather being delightfully fine there was a very large attendance during the afternoon. This year there was an additional attraction in the first exhibition of the Potters Bar and District Amateur Rose Society, of which Viscountess Enfield is president. There were two spacious marquees, and the exhibition was a very fine one. Messrs. CUTBUSH were to the fore with a magnificent display of Hertfordshire Roses not for competition, and about fifty varieties of Sweet Peas, including some new varieties. The vegetable classes were of great excellence.

HUNTS HORTICULTURAL.

JULY 20.—Hinchbrook, with its gardens of Oriental and real old English beauty, crowded with the loveliest of Roses and flowers, was, through the kindness of the Earl of Sandwich, made the venue of the County horticultural show on the above date. The show, which was inaugurated last year, only included the town of Huntingdon and parishes of Brampton and Hartford, but this year the Committee of Management decided to widen the scope of the Society, so to embrace the whole county. Liberal support was forthcoming, and a magnificent show resulted.

Arranged in four large marquees, the exhibits made a really first-class display. They numbered more than double the total of last year, the figures running almost to 1,500. In the cottagers' section there was an excellent collection of fruit and vegetables, and the keenest of competition prevailed, especially in the vegetable department. The open classes constituted a charming exhibition, and, taking the dry season into account, were excellent. In this section splendid competition reigned between Mr. Barson, the Earl of Sandwich's gardener, and Mr. Lockie, Mr. A. J. THORNHILL's gardener. Mr. Barson was the more successful, and his beautiful products in all departments were worthy of their premier position. Mr. Lockie, however, made some capital exhibits, and carried off a number of prizes. Mr. JOHN E. PERKINS, of Huntingdon, made a brilliant display of Cannas and Carnations. Mr. WINTER, of Hemmingford, showed a collection of vegetables. Messrs. W. & J. BROWN, of Peterborough, had a large collection of lovely Roses and Carnations; and Messrs. WOOD & INGRAM, of Huntingdon, also had a stall of Carnations.

BOSTON HORTICULTURAL.

JULY 20, 21.—For over thirty years this Society has held an annual exhibition, which is very popular in the district, and is attended by a large number of persons. Several classes are open to all comers, including cut Roses. The best twenty-four blooms were staged by Messrs. G. & W. BURCH, Peterborough. Most of the blooms were remarkably good. Mr. T. M. BRADLEY, Peterborough, was 2nd, and they occupied the same positions with twelve varieties. Messrs. BURCH were also 1st with twelve varieties of Tea-scented

Roses. A special silver cup was offered for twenty-four bunches of hardy herbaceous and bulbous plants; this was won by Messrs. W. & J. BROWN, Peterborough, with a very good assortment, well staged; Messrs. H. W. KILLINGWORTH & Co., Boston, were 2nd. Another handsome special prize was for the best and most attractive horticultural exhibit, filling a space of 50 feet. This was won by Messrs. ARTINDALE & SON, Sheffield, who staged a fine lot of Carnations and other flowers, floral decorations, &c.; and they also took the 1st prize for a championship bouquet, having an elaborate one made of Orchids. The best group arranged for effect also came from the Sheffield firm.

Plants were shown in several classes, cut flowers also, with fruit and vegetables. Sweet Peas were numerous, and most of them very good.

Vegetables and hardy fruits were numerous, the vegetables from cottagers were very good, and their Red, White, and Black Currants particularly fine.

Messrs. W. W. JOHNSON & SON, Ltd., set up a large stand of cut flowers, including Sweet Peas. They also had a growing plant of their new main crop Potato, Diamond, to show what a lusty grower it is, and yet not too tall.

HANDSWORTH HORTICULTURAL.

JULY 22, 23.—Fifty years ago, when Handsworth was an open country district instead of a populated area as it is at present, floriculture flourished in its midst. The Handsworth and Lozells Floricultural Society held three and four exhibitions annually, and there were also in existence one or two special floricultural societies. Then came a period of horticultural inaction until 1885, when the Handsworth Horticultural Society was formed, and it was content for sixteen years to hold a small 'show in the "Austins." Four years ago the Society launched out upon a wider scale, and commenced to hold its exhibitions in the Victoria Park. These have grown in importance each year, and with a little more experience in management and improvement in details, there is no reason why the exhibition should not in a short time rival those of Wolverhampton and Leicester.

Great interest centred in the division open to all. The 1st prize group of plants, arranged on a space of 300 feet, was staged by Messrs. J. CYPHER & SONS, Cheltenham, one of those rich and elaborate arrangements this firm is in the habit of setting up. Mr. G. H. KENDRICK, Edgbaston (J. P. Macdonald, gr.), was a close 2nd, and Mr. W. VAUSE, Leamington, 3rd. There were classes for a collection of stove and greenhouse plants, a table of tuberous Begonias, for Fuchsias, Coleus and Caladiums, good examples of each being shown, &c.

Handsome prizes were offered for a collection of fruits in not fewer than ten and not more than fifteen varieties. Mr. J. H. GOODACRE, Elvaston Castle Gardens, took the 1st prize with a fine collection of seventeen dishes, two of them being in duplicate; he had excellent Madresfield Court, Black Hamburg, Gros Maroc, and Muscat of Alexandria Grapes; excellent Peaches and Nectarines, Figs, Plums, Melons, &c. Mr. T. BANNERMAN, The Gardens, Blithfield, Rugeley, was 2nd; and Mr. J. READ, The Gardens, Bretby Park, 3rd. With three bunches of Grapes Mr. GOODACRE was again 1st; Mr. BANNERMAN, 2nd.

Some excellent Roses were shown in the Open-to-all Division. Mr. GEO. PRINCE, Longworthy, was 1st with some excellent specimens, the Hybrid Perpetuals brilliant, and the Hybrid Teas fine in quality. Messrs. PERKINS & SON, Coventry, were 2nd. With twelve blooms of Tea Roses Mr. GEO. PRINCE was again 1st; and Mr. JOHN MATTOCK, Oxford, 2nd—both staging very good blooms.

Carnations were shown in two classes, and bunches of Violas made a pretty display. Table decorations, arranged on tables 8 feet by 4 feet, constituted an attractive feature.

Sweet Peas were largely shown in classes in which Mr. R. SYDENHAM and others offered special prizes: those offered by Mr. A. R. BROWN for bizarre and flaked Carnations and white-ground Picotees, brought some charming blooms.

A large number of honorary exhibits was staged by the trade and private growers. A silver cup, a gold medal, and a money prize had to be awarded among them, with silver medals. The Cup fell to the lot of Mr. GEO. PRINCE, who had a collection of Roses of high quality; Messrs. BAKER, Wolverhampton, took the Gold Medal, also with Roses; Messrs. HEWITT & Co., Solihull, were awarded the money prize for Carnations and cut flowers. Silver Medals were awarded to Mr. G. HANCOX, for foliage plants; Messrs. CAW & Co., for cut flowers; B. R. DAVIS & SON, Yeovil, for double Begonias; J. MATTOCK, for Roses; JARMAN & Co., Chard, for cut flowers in variety; TUPLIN & Co., Newton Abbot, for Carnations; and Messrs. SIMPSON & SON, for Sweet Peas.

DURHAM, NORTHUMBERLAND AND NEWCASTLE HORTICULTURAL.

JULY 27.—This show, held on the above date at Newcastle-on-Tyne, was a representative one, and the quality of the exhibits as well as the number of entries in the various classes far exceeded those of late years. Unfortunately the climatic conditions were unfavourable, and the attendance of visitors was affected thereby.

In the non-competitive collections, Messrs. F. SANDER & SONS, St. Albans, staged a group of Orchids and foliage plants.

Messrs. J. CHARLESWORTH & Co., Bradford, had a display of hybrid Cattleyas and Cypripediums which were very attractive.

Messrs. BALSHAW & SON, Scarborough, sent Carnations, Lilliums, and flowering and foliage stove and greenhouse plants.

Messrs. KENT & BRYDON, Darlington, sent a large miscellaneous group, which was very effectively arranged.

Messrs. STORMONTH & SONS, Kirkbride, had hardy plants and flowers.

Mr. J. W. BARBER, Newcastle-on-Tyne, showed a miscellaneous group of flowering stove and greenhouse plants.

Mr. J. FORBES, Howick, sent a large group, in which Phloxes, Pentstemons, various herbaceous plants, and Carnations were well represented.

Mr. J. DOUGLAS, Bookham, Surrey, had also a choice collection of Carnations.

Messrs. FELL & Co., Hexham, sent a large group of hardy trees and shrubs, giving a light and ornamental effect as arranged with various hardy herbaceous plants and flowers.

Messrs. J. THOMPSON & SON, Forest Hill, Newcastle-on-Tyne, sent a large group of Carnations, Sweet Peas, and annuals.

Messrs. GIBSON & Co., Leeming Bar, Bedale, sent a group of cut hardy flowers.

Messrs. ARTINDALE & SON, Sheffield, sent a group of Violas and Carnations.

Mr. H. A. INNES, Newcastle, had an extensive group of Cactaceous plants.

COMPETITIVE CLASSES.

Five groups of miscellaneous plants, 20 feet by 10 feet each, were staged, and were very effectively arranged, but unfortunately a few cut flowers had been used, and in consequence some of the best groups were disqualified.

In the class for six specimen plants in flower the pitmen had it to themselves, and the huge specimens of Clerodendrons, Rondeletias, Allamandas, Lapagerias, &c., were marvels of cultural skill and care.

Among the cut-flower classes for bouquets and dinner-table decorations, the local trade made a grand display. The Roses in almost all the open classes were good. The premier awards went to Messrs. DICKSON & SON, Newtownards, and Mr. HUGH DICKSON, Belfast.

The prizes for Sweet Peas and Carnations were keenly competed for, and the quality of the flowers shown was above the average.

In the large class for flowers of hardy herbaceous plants, Messrs. EDMONDSON, Newcastle, and GIBSON & SON, Bedale, were the winners with fine groups of cut blooms very neatly arranged.

Vegetables were not so good as usual, nor were the exhibits so numerous.

FRUIT.

The fruit generally exceeded in quality that usually exhibited at this show. In the class for eight dishes of fruit, distinct, the Earl of LONDENBOROUGH (gr., Mr. J. C. McPHERSON), Londesborough Park, was 1st; Lady BEAUMONT (gr., Mr. Nicholls), Carlton Towers, 2nd; the Earl of DURHAM (gr., Mr. E. Combey), 3rd.

For four dishes Mr. McPHERSON was again 1st; Mr. G. PEARSON, Brancepeth, Durham, 2nd; Mr. NICHOLLS, 3rd.

In the class for four bunches of Grapes, not fewer than two varieties, Mr. NICHOLLS was 1st; 2nd, J. HUTTON, Esq. (gr., Mr. T. Cowperthwaite).

For two bunches Muscat, Mr. McPHERSON was 1st, with fine finished bunches of Muscat of Alexandria; Miss MUSCHAMP (gr., Mr. W. Mark), Corbridge, 2nd.

For two bunches of White Grapes, any other variety, Mr. NICHOLLS was 1st with Buckland Sweetwater.

For two bunches of Black Grapes, Mr. W. NICHOLLS was 1st with finely-finished Black Hamburg.

The best dish of Peaches was shown by Mr. J. C. McPHERSON; Mr. NICHOLLS being 2nd.

Mr. E. COMBEY was 1st for a dish of Nectarines.

For two dishes of Strawberries Mr. N. MACFARLANE, Alnwick, was 1st.

Mr. McPHERSON was 1st for twelve fruits of Tomatos.

In the amateurs' class for four dishes of fruit, Mr. COWPERTHWAIT was 1st.

THE HORTICULTURAL CLUB.

THE annual excursion took place on Wednesday, July 27, and, thanks to the hospitality accorded to the members and their friends by Mr. and Mrs. HARRY J. VEITCH and the general arrangements made by Mr. VEITCH, some fifty-odd participants spent a most delightful and instructive day. The weather fortunately was only a little chequered by occasional showers, and even this was more than counterbalanced by the prevailing freshness of the landscape after the previous heavy rainfall. The party went down by the 10.55 train from Paddington in two saloon carriages, and being met at Slough by their host, had a delightful drive by brake to Langley Park, the residence of Sir R. Harvey, Bart, where, by permission, they had an opportunity of inspecting a number of remarkably weird examples of Japanese bronzes, nightmarish combinations of dragons, Cupids, and fierce-looking lions with yard-wide grins upon their very open countenances, prior to viewing the greatest marvel of all, the renowned Cedar of Lebanon, which forms the chief attraction there among many. This Cedar utterly transcends all ordinary ideas, owing to its immense size and the peculiar decumbent habit of its branches, the lower of which spread horizontally in all directions to a great distance, completely covering with still rapidly spreading foliage a circle of no less than 100 yards circumference.

Penetrating this, we reach an enormous trunk which towers to a great height, sending out similar but smaller branches to some elevation, and finally forming a grand mass of foliage, somewhat more on normal Cedar-like lines. The main lateral branches are seen to be of huge girth in themselves, and resting upon the soil at a considerable distance from the trunk, spread out into wide sheets of vigorous verdure to form the circle aforesaid. To look at this tree one would believe it to be at least one thousand years old, judging by ordinary standards of growth, and yet it is computed to be no more than 150 years old, and certainly not 200, as the Cedar of Lebanon had not been introduced into this country so long ago. In the same garden is an extraordinary example of the common Spruce Fir. This, too, appears to have caught the spreading habit of the Cedar, its lowest branches radiating horizontally and resting on the soil. It differs, however, in the fact that a large number of these branches have rooted, and while still attached have formed a ring, or rather thicket, of good-sized trees, more of which appear to be in process of formation. The most curious feature is observed when this thicket is entered, as it can be here and there, when it is seen that each tree is joined to the main trunk by a slender branch an inch or so in diameter and a yard or two long, which at the rooting point suddenly swells out to a foot or more thick, which continues horizontally for a few yards and then lifts perpendicularly to form the tree proper.

The effect is very odd and shows that so soon as the rooting of the branch was perfected, the resulting young tree ceased to contribute an appreciable annual ring to the connecting link. After these, the beautiful collection of Bamboos, &c., was visited and much admired, and the party then proceeded *via* Black Park to East Burnham Park, the seat of Mr. Harry Veitch, where a generous luncheon was provided and also afternoon tea, when Mr. Veitch's beautiful gardens, poultry, aviaries, &c., to say nothing of the houseful of artistic treasures, had been duly investigated. Subsequently the party was driven to Maidenhead, *via* the renowned Burnham Beeches and the celebrated grounds of Dropmore, where an appropriate finale to a delightful day was enjoyed in the form of a capital dinner at Skindells Hotel, prior to the home journey thence to Paddington. That Mr. and Mrs. Veitch's abundant kindness found due recognition in a hearty vote of thanks need hardly be stated. C. T. D.

CARDIFF AND COUNTY HORTICULTURAL.

JULY 27, 28.—The sixteenth annual show held under the auspices of the above Society took place in the Sophia Gardens, Cardiff, on the above dates. The Society has every reason to be gratified with the increased number of entries and the quality of the material exhibited this season. The only thing to be regretted is that the weather was so unpropitious on the opening day.

Taking into consideration the recent dry weather, the Roses staged, both as regards number of exhibits and general excellence, were one of the features of the show; and in this respect it was remarked by several of the visitors that it was one of the best shows seen outside of London this year. Sweet Peas were also well represented, and added their quota to the general excellence of the show. The vegetables considered through and through were of a very high quality, and were a credit to the growers.

PLANTS.

The competition in the open classes for specimen plants was not very keen. For two flowering and two foliage stove and greenhouse plants, Messrs. J. CYPHER & SONS, of Cheltenham, were easily 1st with *Crassula*

coccinea and *Statice intermedia* as flowering plants, and *Croton mortefontaineensis* and *Kentia Fosteriana* as foliage plants. W. J. BUCKLEY, Esq., Llanelly (gr., Mr. Carpenter), took 2nd place with *Bougainvillea Sanderiana*, *Clorodendron Balfourianum*, *Croton Baron de Rothschild*, and *Kentia Belmoreana*.

For a group of miscellaneous plants arranged for effect in a space of 150 square feet, Messrs. J. CYPHER & SONS won 1st prize again. The grouping was light and graceful, and the plants choice and well grown. Two plants not often seen in gardens nowadays were freely used in this collection, and were the source of some inquiry from visitors, viz., *Chironia baccifera* and *Origanum Dietamnus*. W. J. BUCKLEY, Esq., took 2nd place in this competition; whilst W. W. LAWES, Esq., of Trowbridge, was placed 3rd.

In the Amateur class W. J. BUCKLEY, Esq., took 1st prize for a group of mixed plants in a space of 50 square feet; Mrs. EVAN LEWIS, Llandaff, 2nd; and JAMES HOWELL, Esq., Cardiff, 3rd.

For a group covering a space of 25 square feet, C. WALDRON, Esq., Llandaff, was placed 1st, and Mrs. EVAN LEWIS, 2nd.

A large group of foliage plants, consisting mainly of well-coloured *Crotons*, was exhibited by the Marquis of BUTE (gr. Mr. H. Farmer), but was not put up for competition.

CUT FLOWERS.

As previously stated Roses formed one of the main features of the show, but owing to the heavy rains experienced in the district lately the blooms staged by the local growers were not so good as might otherwise have been the case, and as a consequence the majority of the prizes went to the competitors from a distance. In the collection of twelve distinct varieties of Roses, three blooms of each, Mr. H. DREW, of Longworth, took 1st prize, and Mr. GEO. PRINCE, of Longworth, 2nd. For a similar collection of Teas or Noisettes the same exhibitors were placed as in the previous class. Messrs. J. JEFFERIES & SON, of Creneester, were awarded 1st for a collection of twenty-four distinct varieties, and also 1st for a collection of 18 distinct varieties of Teas or Noisettes. Mr. GEO. PRINCE was awarded 2nd in both of these classes.

For 12 blooms of any one variety other than Teas or Noisettes Messrs. JARMAN & CO., of Chard, took 1st with a box of Mrs. John Laing. Messrs. S. TRESEDER & SON, Cardiff, took 1st place for a box of 12 blooms of any one variety of Tea or Noisette, the variety shown being *Medea*.

In addition to the prizes gained by Messrs. JEFFERIES & SONS in the foregoing classes they were awarded the Royal Horticultural Society's Silver Medal for having the best exhibit in these same classes.

In the Amateur division the principal prize-winners were R. F. HOBBS, Esq., Worcester; S. ROBINSON, Esq., Cardiff; and A. TOWNSEND, Bridgend.

The competition class for a collection of cut Roses shown with their own foliage and flower bud and arranged for effect in a space of 6 feet by 3 feet, was a keen one, and resulted in the production of the brightest piece of colour in the show. Mr. J. MATTOCK, of Oxford, took the 1st place, his collection containing among other varieties those following:—*Madame A. Chatenay*, *Dorothy Perkins*, *Liberty*, *White Maman Cochet*, *Souvenir de Catherine Guillot*, &c. Mr. GEO. PRINCE was placed 2nd, and some of the best varieties in his group were *Marquis of Salisbury*, *Mrs. Grant*, *Georges Schwartz*, and *Lady Battersea*. Mr. J. CROSSING, Penarth, and Messrs. S. TRESEDER & SON, Cardiff, were 3rd and 4th respectively.

HARDY HERBACEOUS PLANTS

were well shown, Mr. W. TRESEDER, Cardiff, taking 1st prize for a collection of cut flowers covering a space of 45 square feet. Messrs. STOKES & SONS, 2nd; and Messrs. H. & W. EVANS, Llanelly, 3rd.

In addition to other florists' flowers, there were some pleasing groups of *Carnations* and *Picotees* shown with their own foliage and buds—a much more rational and artistic method of exhibiting these lovely flowers than when they are boxed, collared, and dressed.

Messrs. I. HOUSE & SON, Bristol, put up a fine collection of eighteen distinct varieties of Sweet Peas, for which they were awarded 1st prize. Unfortunately, the use of a purple background of art drapery detracted very considerably from the colour of many of the varieties shown. R. BATHURST, Esq., took 2nd, and T. J. DUGMORE, Esq., 3rd places in this competition.

FRUIT.

The competition in the fruit classes was not so strong as one would wish to see at such a place as Cardiff. The date of the Show is, however, a little too early for the generality of hardy fruit, and the few Apples staged would have been very much better left upon the trees to ripen. Currants and Gooseberries were good, and were an indication of what can be done in the neighbourhood.

For two bunches of any black Grapes, Sir A. HENDERSON, Wellington, was 1st; and T. J. THOMAS, Esq., Aberdare, 2nd, with the variety *Black Hamburg*; T. S. CARTWRIGHT, Esq., Llandaff, was placed 3rd, with two bunches of *Madresfield Court* much larger in every way than the two foregoing, but unripe.

For two bunches of any white Grape, T. S. CARTWRIGHT, Esq., was 1st; R. ENGLAND, Esq., Rumney, 2nd; and E. H. EBSWORTH, Esq., Llandaff, 3rd.

Sir A. HENDERSON took the 1st prize for the collection of six dishes of dessert fruit: T. S. CARTWRIGHT, Esq., 2nd; and E. B. EBSWORTH, Esq., 3rd.

For a dish of five Peaches the Marquis of BUTE took 1st prize with a magnificent lot of Princess of Wales. The Marquis also added considerable interest to the fruit collection by exhibiting several pot Vines laden with well-developed and highly-coloured fruit, also Pines and Melons, none of which were for competition.

VEGETABLES.

For a collection of vegetables, consisting of nine distinct kinds, Sir A. HENDERSON was successful in gaining 1st place; Mrs. JENNER, Wenvoe, Cardiff, 2nd; and JOHN DEACON, Esq., Bridgend, 3rd.

Potatoes were shown in excellent condition, although from the purely culinary standpoint the individual tubers seemed to be verging too much to the large size. E. B. EBSWORTH, Esq., was 1st for eighteen white kidney tubers; Mr. H. R. CYPHER, Cardiff, was 1st for eighteen coloured kidney tubers; and Colonel SANDFORD, Wellington, 1st for eighteen white round tubers; and E. B. EBSWORTH, Esq., 1st for the same number of coloured round tubers.

A good display of all kinds of vegetables was made both in the Open and Cottagers' classes, and the competition evoked was very satisfactory.

TRADE EXHIBITS.

Some of the most noteworthy trade exhibits were made by Messrs. SUTTON & SONS, Reading, who showed a fine collection of *Gloxinias*, for which they received a Gold Medal; Messrs. T. S. WARE & CO., Feltham, *Begonias*, for which they were also awarded a Gold Medal; Mr. M. PRITCHARD, Christchurch, showed a choice collection of heraceous plants (*Silver-gilt Medal*); Messrs. WATERER & SONS, Bagshot, a stand of retarded *Lilies* and *Lily of the Valley*, for which they obtained one of the Society's *Silver-gilt Medals*.

In addition to the special awards already mentioned, the Royal Horticultural Society's Gold Medal was awarded to the Marquis of BUTE for collections of plants and fruits; the Cardiff Society's Silver Medals to Mr. VINCENT SLADE, Taunton, for *Zonal Pelargoniums*; to Mr. H. R. GOOLVEN, Manchester, for *Sweet Peas*; to Messrs. C. PHELPS & CO., Cardiff, for *Gloxinias* and *Roses*; and to Messrs. BLACKMORE & LANGDON, Bath, for *Begonias*.

Silver-gilt Medals were also presented to Mr. W. TRESEDER for *Dahlias*, and for bouquets, sprays, and baskets of flowers.

SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.

ANNUAL OUTING.

The members of this Society, accompanied by a few friends, passed a very pleasant afternoon on July 28, when they had their annual outing. Last year the Society was invited by Mr. Peter Kay to inspect his famous vineries at Finchley, and as the *personnel* of the Society changes very considerably each year, it is a desirable thing that these young Frenchmen, who come to this country for the double purpose of learning the English language and of obtaining an insight into British horticulture, should be given an opportunity occasionally of visiting some representative establishment, and of enjoying social intercourse with British gardeners. Such means as these have an effect wider in its scope than would appear at first sight, for the young men who return to France (half a hundred each year) carry back with them pleasant memories of the time they have spent in England, and such international intercourse tends to beget a better understanding between the two peoples, owing to the increased knowledge each obtains of the other.

The much-respected President, Mr. George Schneider, had on this occasion arranged a trip to Burnham Beeches, being invited there by Mr. Harry J. Veitch. The party left Paddington rather late at 3.20 p.m., and travelled by a special saloon carriage to Slough, where they were met by Mr. Veitch with three large brakes provided by that gentleman. After a pleasant drive, Mr. Veitch's residence at East Burnham Park was reached. Here tea was served immediately under a tent on the lawn, and directly afterwards Mr. Veitch conducted the party through his pleasant gardens, pointing out a beautiful view of Windsor Castle. After admiring the lake and the Water-Lilies and other objects, but regretting that time would not allow of a visit being made to a wild garden Mr. Veitch has made in the midst of a wood, the party again mounted

the brakes, and, after cheers had been given for Mr. and Mrs. Veitch's hospitality, we were hurried off to

DROPMORE.

Our readers have many times heard of the glory of Dropmore, the residence of the Hon. J. B. Fortescue. Mr. C. Page, the gardener, met the party and conducted them through as much of the grounds as time would permit, everyone admiring the extraordinary and magnificent specimens of coniferous and other trees for which Dropmore will be famous for many years to come. We can only refer here to the most striking of these trees.

Proceeding to a point immediately in front of the mansion we had a very pretty view of Windsor Castle, and noted a fine tree of the white Birch, also a white Poplar bearing much Mistletoe, and immediately at our feet some of the wild Heather left in the condition it was before the grounds were formed. Then Mr. Page pointed out a splendid tree of *Tsuga Mertensiana* (*Abies Albertiana*), which it is said was given by John Standish many years ago to Lord Grenville, who then lived at Dropmore. Mr. Page remarked that he afforded the tree a top-dressing each year, putting over the roots about 1 inch deep of leaf-mould and clayey marl obtained from the lake.

Next was a specimen of *Pinus monticola*, still growing fast: *Abies grandis*, planted in 1861, which has lost its leader, but is a very remarkable tree; *Pinus Escarena*, planted (like the *Gardeners' Chronicle*) in 1841. It has a very thick stem and a distinct habit of growth. *Cedrus atlantica* was much admired for its large dimensions, and good condition. *Pinus ponderosa* (*Benthamiana*) was very fine, also *Picea Pin-drow*, 30 feet to 40 feet high. The finest specimen of *Sequoia gigantea* was approaching 100 feet high, and has a stem at least 7 feet in diameter at the base. It was planted in 1862, and is a glorious tree.

Then was seen an excellent tree of *Pinus insignis* planted in 1839, in which the true characteristics of this handsome species are now fully developed. We afterwards admired *Pinus Strobus*, *Tilia argentea* (a handsome Lime, the leaves of which are white on the under surface), the magnificent Cedar avenue (there exists no information in respect to the year in which the trees were planted), tall Scots Firs with their reddish stems all aglow with the rays of the setting sun shining upon them, and two extraordinary specimens of the Douglas Fir (*Pseudo-tsuga Douglasi*). Of these two trees it was difficult to admire one more than the other. The taller specimen is 127 feet high, and was planted in 1830; but the other, though not so tall, has a more spreading habit, and its bottom boughs sweep the ground for a distance of nearly 20 yards. This tree is still growing very fast, and has extended on one side alone as much as 6 feet during the past four years. Other exceptionally good trees included *Pinus Lambertiana* (planted in 1845), *Cryptomeria japonica*, and *Tsuga Brunoniana*, the Himalayan Hemlock Spruce. This latter tree is probably the best of its species in this country, and by reason of the silvery colour of the undersides of the extra long leaves, its effect when breezes lift up the slender branches is most beautiful. An excellent illustration of this rare species, prepared from the Dropmore tree, was published in the *Gardeners' Chronicle*, October 16, 1886. In many districts this beautiful species is considered to be too tender, but in the position this specimen occupies at Dropmore it succeeds well. Before all the attractions of Dropmore were exhausted it was necessary to rejoin the brakes and drive to Slough, to catch the 8.55 P.M. train for London.

BASINGSTOKE FLOWER SHOW.

AUGUST 1.—The twenty-eighth annual show was held in Goldings Park, and was successful in every way. The exhibits of Plants were numerous and of good quality. Mr. Wasley, gr. to J. B. TAYLOR, Esq., Sheffield Manor, Basingstoke, was 1st with fine specimens.

Mr. G. Best, gr. to F. D. LEYLAND, Esq., The Vyne, Basingstoke, was successful with a group of miscellaneous plants arranged for effect. Tuberous Begonias were a feature, for which Mr. W. Green, gr. to S. E. BATES, Esq., Mangdown, won the premier award.

Cut flowers were numerous, especially herbaceous varieties. For twelve bunches, distinct, Mr. Hunt, gr. to J. MOSS, Esq., Fern Bank, Blackwater, was 1st with a choice assortment.

Although Roses were poor in quality, Carnations and *Picotees* were remarkably fine.

Grapes were shown well, also Peaches, some fine fruits of *Alexandra Noblesse* Peaches being excellent. Nectarines and Melons were also well in evi-

dence, Buscot Park Seedling of the latter fruit being the best green-fleshed Melon exhibited.

Vegetables were numerous and of a high standard of quality. Mr. BOWERMAN won the premier prize for eight dishes.

SCOTTISH HORTICULTURAL ASSOCIATION.

JULY 30.—Nearly 100 members of the Scottish Horticultural Association responded to the invitation of Messrs. Dicksons, Ltd., Edinburgh, to inspect their Nurseries at Craigmillar. The grounds were in high-class order, and the members freely expressed their approbation. The breadths of young Scots Fir and Larch, particularly the Japanese Larch, were interesting. Flowering shrubs, herbaceous plants, alpinas, and general nursery produce are all alike well done. Apples, Pears, Plums, and Cherries deserve a special word of praise.

The usual vote of thanks concluded a most interesting outing.

LEICESTER ABBEY PARK FLOWER SHOW.

AUGUST 2, 3.—The Flower Show was one of the best held in the neighbourhood in recent years, and, favoured with brilliant weather, attracted a large number of visitors.

PLANTS.

Groups of plants arranged for effect were a leading feature, the 1st prize of £20 falling to Messrs. JAMES CYPHER & SON, Cheltenham. Mr. W. VAUSE was 2nd.

The latter was placed 1st with six stove and greenhouse plants, of which three were in flower. Mr. W. FINCH, Coventry, was 2nd.

Mr. FINCH was 1st with six exotic Ferns, staging some good specimens.

The best specimen plant in bloom was *Bougainvillea glabra*, from Mr. VAUSE. There was also a class for eight miscellaneous plants.

CUT FLOWERS.

Roses.—With thirty-six blooms of *Roses*, Messrs. A. DICKSON & SONS, Newtownards, Belfast, were 1st, having generally large full fresh blooms, chief among them being *Horace Vernet*, Mrs. Davison (a pale rose with a deep fleshy tint in the centre), *Marie Verdier*, *Lady Ashdown*, *Bessie Brown*, *Chas. Lefebvre*, *Ulrich Brunner*, *Her Majesty*, *Ben Cant*, a fine bloom of *Star of Waltham*, &c. With twenty-four blooms of *Roses*, Messrs. A. DICKSON & SONS were again 1st; and Mr. H. DREW, Longworth, Berks, 2nd. With twelve blooms of one variety, Messrs. A. DICKSON & SONS were 1st with *Frau Karl Druschki*; and Mr. H. DREW, 2nd, with *Mrs. J. Laing*. With twelve *Teas* and *Noisettes*, similar positions were again held by these two growers. With twelve *Teas*, one variety, Messrs. A. DICKSON & SONS were 1st with the variety *Lady Roberts*; and Mr. H. DREW, 2nd, with *White Maman Cochet*. The best *Rose* selected from the foregoing classes was *Star of Waltham*, ten very fine examples being contained in Messrs. A. DICKSON & SONS' 1st prize box of thirty-six blooms.

Roses were also well shown by amateurs and private gardeners.

Carnations and *Picotees*.—These flowers are always a leading feature at Leicester, especially in the Amateurs' classes, in which the competition was very keen.

In the open class for twelve *Carnations*, bizarres and flakes, Mr. A. R. BROWN, Handsworth, Birmingham, was 1st with good and bright flowers.

With twelve self *Carnations*, Mr. R. C. CARTWRIGHT (gr., Mr. Rudd), was 1st with large, bright flowers, and Mr. A. R. BROWN, 2nd. With twelve yellow-ground *Carnations*, these two exhibitors again held similar positions.

With twelve white-ground *Picotees*, Mr. A. R. BROWN came 1st with excellent blooms, and Mr. RUDD, 2nd.

There were also classes for single blooms of bizarre, flaked, and self *Carnations*, and for *Picotees*.

Cut Stove and Greenhouse Flowers.—The best stand of twelve bunches came from Sir A. MUNTZ, Bart. (gr., H. Blakeway); Mr. W. HORLOCK being placed 2nd.

Hardy Annuals in bunches made an effective display. The best twelve bunches came from Mr. W. WRIGHT, Jun.; Mr. J. H. HILL being 2nd.

Mr. W. BARSBY had the 1st prize for twelve bunches of zonal *Pelargoniums*, tastefully arranged in vases.

Mr. W. WRIGHT, Jun., had the best twelve blooms of fancy *Pansies*, and Mr. J. H. HILL the best six blooms; Mr. H. YEOMANS taking the 1st prize with twelve bunches of *Violas*.

Floral Decorations, Open.—Mrs. H. CARNALL, Court Florist, London Road, was 1st with a hand bouquet. Messrs. W. & J. BROWN, Peterborough, were 1st for a bride's bouquet. Mr. H. BLAKEWAY won the 1st prize for a basket of flowers.

For twelve bunches of hardy herbaceous and bulbous

flowers Mr. JAS. WRIGHT, Leicester, was 1st, and Mr. W. WRIGHT, Jun., 2nd.

FRUIT.

The fruit exhibited was decidedly good. With eight dishes, with a Pine allowed, Mr. J. H. GOODACRE, The Gardens, Elvaston Castle, Derby, was 1st, with a well-balanced collection. Mr. J. READ, The Gardens, Bretby Park, Chesterfield, was 2nd.

In the class for 8 dishes, Pine excluded, Mr. J. H. GOODACRE was again 1st. Mr. W. J. DRAKE, Market Rasen (gr. J. Brown), was a good 2nd. With four varieties of Grapes, two bunches of each, Mr. GOODACRE obtained the 1st prize. Mr. GOODACRE was the only exhibitor of a Pine-apple, taking the 1st prize with a good fruit of the variety *Queen*.

Mr. J. BROWN took the 1st prize for two bunches of Black Hamburg Grapes. Mr. GOODACRE was 2nd. Mr. NISBETT came 1st with two bunches of Muscats, having fine berries, clean and bright, though lacking in colour. Mr. GOODACRE was 2nd with fruit of a better colour, but the berries a little past their best.

With two bunches of blacks other than *Hamburg*, Mr. GOODACRE was 1st with *Madresfield Court*. Mr. J. SWANWICK was 2nd with *Muscat Hamburg*.

With two bunches of any white Grape but *Muscat*, Mr. BROWN was placed 1st with very fine *Foster's Seedling*; Mr. NISBETT coming 2nd.

The best six Peaches came from Mr. SWANWICK; Mr. NISBETT was 2nd. Mr. BLAKEWAY had the best dish of Nectarines.

There were good dessert and Morello Cherries. Gooseberries and Currants were also shown.

Fruitables were of fine quality. Mr. E. BECKETT, Aldenham House Gardens, took the 1st of Messrs. SUTTON & SON's special prizes with some very fine produce; Mr. J. HUDSON was 2nd. The latter took the 1st of Messrs. HARRISON & SONS' special prizes, and they also offered prizes for Sweet Peas. Mr. J. HUDSON also won the 1st of Mr. R. PRINGLE's special prizes, also for a collection of vegetables. Mr. H. CHAMBERLAIN took the 1st of Mr. R. STDENHAM's special prizes for Sweet Peas with a very fine collection.

A large tent was filled with produce shown by cottagers and allotment holders.

Miscellaneous collections were very numerous, and supplied several fine features. *Gold Medals* were awarded to Messrs. MACRIMMON & FULTON, Leicester, for various cut flowers, decorations, &c.; to Mrs. CARNALL, Leicester, for floral decorations, &c.; to Mr. F. BROWN, Market Bosworth, for cut flowers, &c.; to Mr. W. BENTLEY, Leicester, for an excellent collection of *Roses*; and to Messrs. DOBBIE & CO., Rothsay, for *Roses*, *Cactus Dahlias*, &c.

Silver Medals were awarded to Mr. J. BARROW, Leicester; C. WARNER, Leicester; HARRISON & SONS, Leicester; C. HOLDEN, Hinckley; JAS. WRIGHT, Leicester; CLIBRAN & SON, Altrincham; W. L. PATTERSON, A. DAY, Coventry; F. M. BRADLEY, Peterborough; and W. & J. BROWN, Peterborough.

SCHEDULES RECEIVED.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY'S grand flower show, to be held in St. Andrew's Halls on Wednesday and Thursday, September 7 and 8, 1904. Secretary and treasurer, Mr. Hugh Mackie, 55, Bath Street, Glasgow.

TRADE NOTE.

CROP REPORT FROM HOLLAND.—As usual, we have the pleasure to hand you the following report on the present condition of our crop this year. On account of the very wet weather which prevailed last autumn, some biennials were sown very late, and in some parts they could not be sown at all. Consequently the area of Beets, Mangels, Turnips, Parsleys, Corn Salad, &c., is not so large as was first proposed. Our mild winter did not kill any plants. In spring we had excellent weather, so that field work, sowing, and planting took place under the most favourable circumstances. This spell of fine weather has lasted ever since up to the present time, so that as a whole the prospects of the crop are good. Cauliflowers look good and promise a good crop. White Cabbage, Red Cabbage, Savoy, Brussels-Sprouts, and Borecole have developed very well, look healthy, and promise a good crop. Turnips and Swedes—owing to the unfavourable weather in autumn, part of these were sown too late or were not sown at all; a good deal, however, has developed very well, and promises a good average crop, with the exception of some few varieties.

such as Milan. Kohl Rabi—a good deal got lost; small crop. Mangel-Wurzel and Sugar Beet look good. Beet stands pretty well. Carrots as a whole promise a fairly good crop. Parsnips and Scorzonera—good crop. Corn Salad—middling; some sowings have failed. Radishes look good. Spanish Radish—little planted, as some sowings failed last autumn—looks good. Onions are mediocre—the bulbs were not healthy. Garlic Bulbs—good. Celeriac—unhealthy; small crop. Parsley—plain Parsley good; rooted Parsley middling. Borage—very good crop. Chervil—average crop. Spinach promises an average crop. Peas—very good. Cucumbers—mediocre. Dwarf Beans and Running Beans—good as a whole; some plants are poor on account of weak germination; hard winds have also done some damage.

Flower Seeds.—After two years, which were most unfavourable for flower-seed growing, we are now glad to say that, owing to the fine weather in spring, the actual situation of the crops as a whole is promising. *Sluis & Groot, Enkhuizen.*

ENQUIRY.

CAN any of our readers supply a correspondent with a method of trapping bats?

MARKETS.

COVENT GARDEN, August 3.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Plants in Pots, &c.: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Aralias, per doz.	6-12 0	Lycopodiums, per	dozen ...
Arbor Vitæ, doz.	9-10 0	dozen ...	3-4 0
Aspidistras, doz.	18-20 0	Marguerites, per	dozen ...
Aucubas, per doz.	4-8 0	dozen ...	2-4 0
Campanulas, ...	4-10 0	— Etoile d'Or,	per dozen ...
Cannas ...	4-6 0	dozen ...	6-10 0
Cocos ...	12-18 0	Mignonette, per	dozen ...
Crassula ...	6-12 0	dozen ...	3-4 0
Crotons, per doz.	12-24 0	Musk, per dozen	2-4 0
Cyperus, per doz.	3-4 0	Palms, variety	each ...
Dracaena, variety,	dozen ...	each ...	3-20 0
dozen ...	6-18 0	Pelargoniums,	per dozen ...
Ericas, per dozen	8-12 0	dozen ...	4-10 0
Euonymus, vars.,	per dozen ...	— double scarlet,	per doz. ...
per dozen ...	4-10 0	dozen ...	4-6 0
Ferns in var., per	dozen ...	— pink ...	2-6 0
dozen ...	4-30 0	— white ...	2-6 0
Ficus elastica, per	dozen ...	Pteris tremula, p.	dozen ...
dozen ...	9-24 0	dozen ...	4-8 0
Fuchsias, per doz.	2-4 0	Rhodanthe ...	4-8 0
Heliotropes, per	dozen ...	Rose-trees, per	dozen ...
dozen ...	2-4 0	dozen ...	4-10 0
Hydrangeas, doz.	6-12 0	Stocks, per dozen	3-6 0
Lilium Harrisii,	per dozen ...	Tropæolum, per	dozen ...
dozen ...	4-8 0	dozen ...	3-4 0
— rubrum, doz.	6-9 0	Verbenas, per	dozen ...
— candidum, dz.	6-9 0	dozen ...	6-10 0

Vegetables: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Artichokes, Globe,	per dozen ...	Mushrooms (house)	per lb. ...
per dozen ...	1-6 2 0	per lb. ...	0-10 1 0
Beans, Broad, per	bushel ...	Onions, green,	doz. bunches ...
dozen ...	1-3 1 6	dozen bunches ...	2-6 3 0
— dwarf, p. sieve	1-10 1 6	— per bag ...	4-0 —
— Scarlet Runners,	per bushel ...	— per case ...	6-0 —
per bushel ...	3-0 3 6	Parsley, doz. bun.	2-0 2 6
Beetroots, bushel	2-6 3 0	— sieve ...	0-9 1 0
Cabbages, tally ...	3-0 5 0	Peas, per bushel	4-0 5 0
Carrots, per doz.	bunches ...	Potatoes, per ton	80-120 0
dozen ...	0-6 1 3	Radishes, per	dozen bunches
Cauliflowers, doz.	2-0 3 6	dozen bunches	0-8 0 9
Celery, per dozen	bunches ...	Salad, small, pun-	nets, per doz. ...
dozen ...	15 0 —	dozen ...	0-9 —
Cress, doz. pun.	0-9 —	Shallots, lb.	0-2 3 —
Cucumbers, doz.	1-3 0 0	Spinach, p. strike	1-0 —
Endive, per doz.	2-0 2 3	Tomatoes, Chan-	nel Islands,
Garlic, per lb.	0-2 3 —	per lb. ...	0-2 3 —
Horseradish, fo-	reign, p. bunch	— English, doz.	2-9 3 6
Leeks, per dozen	bunches ...	Turnips, new, per	dozen ...
dozen ...	1-0 1 6	dozen ...	1-0 2 0
Lettuces, Cabbage,	per dozen ...	Vegetable Mar-	rows, per doz.
dozen ...	0-9 1 0	rows, per doz.	0-9 1 0
— Cos, per score	0-6 1 6	Watercress, per	dozen bunches
Mint, doz. ...	3-0 2 6	dozen bunches	0-3 0 8

Cut Flowers, &c.: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Asters, per doz.	2-0 6 0	Lilium lanc-	folium ...
Alströméria, doz.	3-0 4 0	dozen ...	1-6 2 6
Arums, per doz.	1-0 3 0	Lily of the Valley,	p. doz. bunches
Bouvardias, doz.	4-0 6 0	dozen ...	6-0 12 0
Carnations, Mal-	maison, 12 blms.	Mallow, per doz.	2-0 3 0
— per bunch ...	0-8 3 0	Marguerites, yel-	low, per dozen
— doz. bunches	0-4 1 0	dozen ...	1-0 2 0
Coreopsis, p. doz.	0-9 1 0	Marguerites, white,	dozen bunches
Cornflower, per	dozen bunches	dozen bunches	2-0 4 0
dozen bunches	0-6 1 0	Orchids, various,	per dozen ...
Dahlias, per doz.	3-0 6 0	dozen ...	2-0 8 0
Delphiniums, per	dozen bunches	— Cattleyas ...	6-0 12 0
dozen bunches	2-0 3 0	Pelargoniums,	zonal, dozen
Ferns, Asparagus,	per bunch ...	dozen ...	3-0 6 0
per bunch ...	0-6 1 6	— white, dozen	bunches ...
French, 12 bun.	0-3 0 4	dozen ...	4-0 6 0
— Maidenhair,	doz. bunches	— double scarlet,	per doz. bun.
dozen bunches	6-0 8 0	dozen ...	2-0 3 0
Gaillardias, doz.	0-9 1 0	Pyrethrum, per	doz. bunches ...
Gardenias, box ...	1-0 2 0	dozen ...	2-0 3 0
Gypsophila, doz.	bunches ...	Roses, Mermec,	per bunch ...
dozen bunches	2-0 4 0	dozen ...	1-0 2 0
Gladiolus, Blush-	ing Bride, per	— white, bunch	1-0 2 0
doz. bunches ...	2-0 4 0	— pink, bunch	1-0 3 0
white, 12 bun.	3-0 4 0	— red, bunch	0-4 1 0
— various, doz.	bunches ...	— Safran, beh.	1-0 2 0
dozen bunches	1-6 8 0	Scabiosa, dozen	bunches ...
— red, per doz.	spikes ...	dozen ...	4-0 6 0
dozen bunches	2-0 3 0	Smilax, 12 bunch.	1-6 3 0
Honesty, bunch	1-0 —	Stephanotis ...	1-0 2 0
Ixia, per doz. bun.	2-0 3 0	Stocks, per dozen	bunches ...
— (French), bun.	1-6 2 0	dozen ...	2-0 4 0
Lavender ...	2-0 4 0	Sweet Peas, per	dozen bunches
Lilium auratum	per bunch ...	dozen bunches	1-0 2 6
dozen bunches	1-6 3 0	Tuberose on	stem, bunch ...
— Harrisii, per	bunch ...	dozen ...	0-9 1 0
dozen bunches	1-0 2 0	— short, p. doz.	0-2 0 4

Fruit: Average Wholesale Prices.

s.d.	s.d.	s.d.	s.d.
Apples, Aus-	tralian, in cases	2-0 6 0	Grapes, Gros Col-
— English, sieve	13-4 0	mar, per lb. ...	0-10 1 6
Bananas, bunch	6-10 0	— Alicante, per	lb. ...
— loose, dozen	1-0 1 6	dozen ...	2-8 1 4
Figs, per doz.	1-6 5 0	Lemons, per case	12-6 27 6
Gooseberries, per	sieve ...	Melons, each ...	0-9 2 0
dozen ...	1-0 1 3	Nectarines, A, per	dozen ...
Grapes, Hambro'	A, per lb. ...	dozen ...	10-15 0
dozen ...	2-0 2 6	— B, per doz. ...	3-0 6 0
— B, per lb. ...	0-6 1 0	Oranges, per case	14 0 —
— Gros Maroc, lb.	1-0 1 6	Peaches, A, per	doz. ...
— Muscat A, lb.	3-0 4 0	dozen ...	8-0 12 0
— B, per lb. ...	0-9 1 6	— B ...	2-0 7 0
		Pines, each ...	2-6 5 0

REMARKS.—Both Cherries and Strawberries are now over. Black Currants, 6s. to 7s. 6d. per sieve; red do., 5s. to 6s. per sieve. Raspberries, 3s. to 3s. 6d. per cwt.; do., per gallon 1s. 6d. English Plums, River's Early Orleans, 2s. 6d. to 3s. per sieve. Apples, St. Julien, Lord Suffield, and Keswick Codlins, 1s. 6d. to 2s. 6d. per half bushel; Gladstone, Beauty of Bath, and Quarrendens, 2s. 6d. to 4s. do. Walnuts, which are now mostly woody, 1s. to 1s. 6d. per sieve. Prices for Potatoes have a downward tendency.

POTATOES.

Home-grown, 80s. to 120s. per ton, John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

WE are now at the end of the season, and after to-day the Market will only remain open on Tuesdays, Thursdays, and Saturdays for pot-plants, and on Mondays, Wednesdays, and Fridays for cut flowers. The plant trade is now practically finished, many growers having already vacated their stands, which they will resume in September or October. Buyers requiring stock for any special purpose will still be able to procure it from the few growers who keep up a regular supply all seasons. Verbenas are still very good, also White Marguerites. Zonal Pelargoniums King of Denmark, Ville de Poitiers, Hermione, and F. V. Raspail are good, but mixed sorts are very poor. Hydrangea paniculata in bush plants and standard are good, also H. Hortensia. Plants of Acalypha hispida (Sandersiana) are obtainable; Crassula coccinea is good; the hybrid varieties are now over. Campanula isophylla alba and C. Mayi are plentiful; some are of poor quality. There are still some good Fuchsias, but the best are passed. Good Rhodanthe may still be bad; while Mignonette, Chrysanthemum segetum, Spiraea (Hoteia) japonica and other spring-flowering plants still hold out. Lilium longiflorum of various sizes are very plentiful, but sell slowly. L. auratum, L. lancifolium, album and rubrum are evidently sold at a loss to the growers. Palms are still seen, but there is practically no trade for them. Codiaeums (Crotons), Caladiums, Cordylines and other foliage plants, are not wanted, and can only be cleared out at very low prices. In Ferns there is still a little trade, and a few growers keep up a display, but many have stopped sending for the season. A few fine plants of Nephrolepis exaltata in large pots and in baskets are to be seen. Asparagus Sprengeri is good in 48's, also larger-sized plants. Buyers sometimes have difficulty in getting material for special work during the dull season, but that is not the case this season.

CUT FLOWERS.

There is very little trade for choice flowers, and only at the week end do ordinary flowers find any demand.

Most Roses are very small, but are still plentiful. Carnations are very prominent, border varieties being over abundant; Malmaison and American varieties are also in excess of all demands. Sweet Peas are not so good, though there are a few of fine quality to be seen. Lilium longiflorum is abundant, one grower having a stand full of fine blooms on long stems; L. laucifolium, album, and roseum are also over plentiful. Herbaceous Philox, especially the white, is very good. Asters are over plentiful, some are English grown, but many come from France. Gladiolus "The Bride," from the open ground is very plentiful; G. hrenchleyensis is also seen in large quantities. Gaillardias, Gypsophila, Stocks, Chrysanthemum leucanthemum, and other hardy flowers are seen in abundance. One grower still continues to bring in Iceland Poppies in good condition. Chrysanthemums are more in evidence. All kinds of cut foliage and Fern is over plentiful. Hardy deciduous foliage, some of which is very good, is now much used in preference to choicer material. A. H., July 30.

FRUITS AND VEGETABLES.

LIVERPOOL, August 3.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Potatoes, per cwt., Early Regents, 4s. to 5s. 6d.; Kidneys, 5s. to 6s. 6d.; new, 1s. to 1s. 6d. per 21 lb.; Turnips, 4s. to 9d. per dozen bunches; Swedes, 3s. 6d. to 4s. per cwt.; Carrots, 8d. to 9d. per dozen bunches; Parsley, 6d. to 8d. per dozen bunches; Onions, foreign, 4s. 6d. to 5s. 6d. per bag; Lettuce, 4d. to 8d. per dozen; Cucumbers, 1s. 6d. to 2s. 6d. do.; Cauliflowers, 10d. to 1s. 9d. do.; Cabbages, 6d. to 1s. do.; Peas, 2s. 9d. to 4s. 9d. per hamper; Beans, 1s. 9d. to 2s. 6d. do.; Kidney Beans, 1s. 9d. per peck. Fruit: Grapes, Almerias, Castiza, 8s. to 7s. 6d. per barrel; superior do., 8s. 6d. to 10s. 6d. do.; Denias, 2s. to 3s. 6d. per barrel for white; and 6s. to 7s. 6d. for colours; Apples, Operto, 5s. to 7s. 6d. per case; do., Lisbon, 5s. 6d. to 8s. do.; Melons, 4s. 3d. to 5s. 3d., and 6s. to 7s. 6d. for 21's and 36's per case; a few lots at 7s. to 8s. per case; Oranges, Valencia, 8s. to 20s. per case; Naples, 7s. 6d. to 8s. 9d. per box; Lemons, Palermo, 4s. 6d. to 7s. 6d. per case; do., Naples, 6s. to 9s. per box; Tomatoes, Valencia, 5s. to 7s. per case; Onions, Valencia, 4s. to 4s. 6d. per case; Operto, 4s. 6d. to 6s. do. St. Johns —Potatoes, new, 1s. 2d. to 1s. 6d. per peck; Peas, 1s. per peck; Cucumbers, 3d. and 6d. each; Gooseberries, 2d. per lb.; Cherries, 4d. do.; Currants, black, 5d. do.; do., red, 4d. do.; Peaches, 2d. to 6d. each; Apricots, 1s. per dozen; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; Pines, foreign, 3s. to 5s. each; Mushrooms, 1s. per lb. Birkenhead:—Potatoes, new, 3d. to 4d. per 5 lb.; Cucumbers, 3d. and 4d. each; Currants, red, 4d. and 5d. per lb.; do., black, 5d. and 6d. do.; Gooseberries, 1d. to 2d. do.; Grapes, English, 2s. to 3s. 6d. per lb.; Cherries, 6d. to 8d. per lb.; Mushrooms 8d. to 1s. do.; Tomatoes, 1 1/2d. to 6d. do.; Peas, 5d. and 1s. per peck.

GLASGOW, August 3.—The following are the averages of the prices during the past week:—Grapes, English, 7d. to 1s. 9d. per lb.; Belgian, 7d. to 9d. do.; Scotch, 7d. to 9d. do.; Strawberries, Scotch, 2d. to 4d. per lb.; Lemons, 4s. to 6s. per box, and 6s. to 10s. per case; Melons, Valencia, 4s. 6d. to 6s. per case; Tomatoes, English, 6d. per lb.; do., Scotch, 5d. to 9d. do.; do., French, 2s. to 5s. per crate; Mushrooms, Scotch, 10d. to 1s. 2d. per lb.; Onions, Valencia, 4s. 6d. to 5s. 10d. per case; Peas, Dutch, 3s. per bushel; Currants, Red, 1s. to 2s. per cwt.; do., Black, Irish, 20s. do.; Gooseberries, Scotch Warrington, 9s. to 10s. do.; Carrots, Dutch, 5s. to 6s. per hamper.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending July 30, 1904.

1904.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL at 9 A.M.				UNSHED.				
	At 9 A.M.		DAY.	NIGHT.	LOWEST TEMPERATURE ON GRASS.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.		RAINFALL.			
	Dry Bulb.	Wet Bulb.											
	deg.	deg.	deg.	deg.							deg.	deg.	deg.	ins.	hr. min.
JULY 24 TO JULY 30.	65	61	72	56					53		66	66	62	0.89	4 46
MEANS	65	61	72	56	53	66	66	62	0.89	4 46			

Remarks.—Thunderstorm on the 30th.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 30, is furnished from the Meteorological Office:—

"The weather during this week was very dull over the kingdom generally, with occasional heavy thunder-

storms over England and at some Irish stations. In Scotland the weather continued dry.

"The temperature was again above the mean, except in Scotland, E., the excess ranging from 1° in England, N.E., the Channel Islands, and England, S.W., to 4° in England, E. The highest of the maxima were recorded either at the beginning or end of the period, and ranged from 83° in England, S., and the Midland Counties, to 73° in the Channel Islands, 72° in Scotland, N., and to 71° in Scotland, W., and Ireland, N. The lowest of the minima, which were mostly registered during the latter half of the week, varied from 42° in Scotland, N., and England, N.W., to 54° in the Channel Islands.

"The rainfall was extremely heavy in several English localities, especially in the Midlands and England, S.W., but in England N.W. the fall was less than the normal. At Hillington during a thunderstorm on Saturday afternoon, 1.56 inch fell within 35 minutes. In all the Scotch districts the fall was much less than the mean, and only equal to it in Ireland, S.

"The bright sunshine was very deficient except in Scotland, N. The percentage of the possible duration ranged from 38 in the district just named, 35 in the Channel Islands, and 32 in England, S., to 16 in Scotland, E., and to 11 in England, N.E."

THE WEATHER IN WEST HERTS.

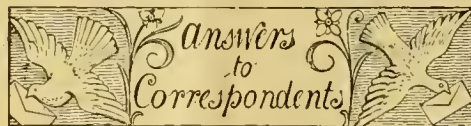
More heavy rain.—This was another warm week, but not nearly so warm as the three preceding weeks—the highest temperature in the thermometer-screen on only one occasion exceeding 74°. On one night, however, the exposed thermometer never fell lower than 56°, which is the highest minimum reading as yet recorded here this year. The ground is still unusually warm, the temperature at 2 feet deep being 3° warmer and at 1 foot deep 4° warmer than is seasonable. No rain has fallen during the last two days, but during the previous six days (July 25–30) 2½ inches was deposited—which is equivalent to a watering of 13 gallons on each square yard of surface in my garden. Of that amount 8 gallons has since come through the bare soil percolation gauge. Notwithstanding the recent heavy rainfall, not a drop of water has come through a similar gauge on which short grass is growing, which only shows how very dry the soil in that gauge must have previously become. There occurred two heavy thunderstorms on the 30th ult., one of which began soon after 1 o'clock in the afternoon, and the other shortly after 5 P.M. The former was much the most severe of the two—indeed, during the nine minutes ending 1.30 P.M. the rain was falling at the mean rate of nearly 1½ inch an hour. The sun shone on an average during the week for 4½ hours a day, or for about 1½ hour a day less than is usual at this season. Calms and light airs have again prevailed. The mean amount of moisture in the air at 3 P.M. has been 5 per cent. in excess of a seasonable quantity.

JULY.

A very hot month.—There have been only three previous Julys in the last eighteen years which have had so high a mean temperature. On seventeen days the highest reading in the thermometer-screen exceeded 75°, on four of these days rose to or above 80°, and on the hottest day to 85°. On the coldest night of the month the exposed thermometer fell to 42°, which is the highest extreme minimum registered by that instrument that I have yet recorded here in July. Moderate quantities of rain were deposited on the first two days of the month, while six days at the end of it were excessively wet. But in the intervening three weeks there was no rain worth mentioning. Rain fell altogether on only ten days, and to the aggregate depth of 3 inches, or more than half an inch in excess of the July average. No rain-water at all came through the gauge on which short grass is growing during the month, and none through the bare soil gauge until the last week, when the percolation amounted to 8 gallons. The winds were, as a rule, below the average in strength; in fact, at no time did the mean velocity for any hour exceed 15 miles. The mean amount of moisture in the air at 3 o'clock in the afternoon was 4 per cent. below the average in July for that hour. *E. M., Berkhamsted, August 2, 1904.*

COLONIAL NOTES.—We have received the following publications: *The Agricultural Gazette of New South Wales*, June. Contents: Universal Nomenclature of Wheat, N. A. Cobb; Fern and Orchid Pests, W. Froggatt; Curing the Lemon, W. J. Allen, &c.—*A Critical Revision of the Genus Eucalyptus*, by J. H. Maiden. Part IV.—*The Forest Flora of New South*

Wales, Parts VI. and VII., by J. H. Maiden.—From the Imperial Department of Agriculture for the West Indies, *The A.B.C. of Cotton Planting*, compiled by Officers on the Staff of the Department.—*Natal Plants*, vol. 2, Part IV., Grasses, edited by J. Medley Wood, A.L.S.—*Report upon the Botanical and Agricultural Department, Gold Coast*, for 1903. The Cocoa and Cotton plantations have greatly developed during the year, and a Botanic Station was established at Tarkwa.



*** * EDITOR AND PUBLISHER.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ASPARAGUS: *J. M.* We can detect no disease in the roots whatever. The failure must be due to something unsuitable in the cultivation.

BOOK ON VINES: *D. C. Barron's Vines and Vine Culture*, price 5s. 6d., post-free, from the Publisher of the *Gardeners' Chronicle*. Red-spider is generally the result of too dry an atmosphere in the house. Damp the surfaces in the house frequently, and if necessary, apply a paste made from flowers-of-sulphur over the hot-water pipes, or dust the leaves over with sulphur.

CARNATIONS: *Northern.* A very pleasing variety, of which there are dozens in commerce as good. It has several good qualities, but hardly pronounced enough to duplicate existing varieties.

CUCUMBER WITH LEAF: *J. W.* This is not unusual. As the outer portion of a cucumber is a swollen branch, enclosing the true fruit, and seeds within it, it is not remarkable that it should occasionally do as other branches do, and produce a leaf.

ERADICATING PLANTAINS: *T. H.* Removal with a sharp knife, taking care to cut below the crown, is a very simple, quick, and efficacious method of ridding grass of these plants. Do not dig them out with the blade, which would leave unsightly holes and cause injury to the turf, but just make a clean cut. Another plan is to apply a corrosive substance, such as sulphuric acid, or even common salt, in the crown of the Plantain, which is eventually killed through its action. The latter is used in the grass vistas at Kew.

EXHIBITING ALPINES: *J. E.* An exhibit of alpine plants is greatly enhanced by arranging them in as natural a manner as possible; and unless expressly forbidden in the schedule, a setting of rockwork would be effective. You should visit other shows where alpine plants are exhibited, and note any good systems practised there. You must be entirely governed by the schedule of the particular society in which you are competing.

GOOSEBERRIES: *G. P.* Syncarpy, or union of two fruits, is not very uncommon.

GRAPES WITHERING: *W. S.* Your Grapes are affected with the disease known as "shanking," which is probably due to some defect in your borders. If they are badly drained this would cause it; on the other hand, drought would have the same effect. Avoid anything that would give the Vines a check.

INSECTS: *R. W., Cranleigh.* The clerical of the Tussock-moth, *Ogryia pudibunda*.

LIST OF PRIVATE GARDENERS: *Max John.* See the *Horticultural Directory*, 12, Mitre Court Chambers, Fleet Street.

MUSHROOM-BED: *Agaricus.* From the nature of the material of which the beds are composed it can hardly be expected that they may be made quite free of other species of fungus and of minute insects. These pests may be reduced very considerably if the manure be turned frequently and made quite "sweet," as it is termed, before being made into beds. The manure might also be partly sterilised by heating it; but whether it would be equally good for the cultivation of Mushrooms afterwards we do not know.

NAMES OF FRUITS: *M. L. 1, Warner's King; 2, Peasgood's Nonsuch; 3, Cox's Orange Pippin.* Pear not recognised; send when in season. Whilst we are willing to name fruits so far as our opportunities permit, our correspondents should not send specimens until fully grown. The numbers should be stuck on with stamp-waste, not pinned.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. I.* Veronica, Andersoni; *Linaria cymbalaria.*—*W. W. 1, Holcus mollis; 2, Aira caespitosa; 3, Agrostis vulgaris; 4, Ranunculus repens; 5, Potentilla Tormentilla; 6, Galium verum.*—*Correspondent. 2, Retinospora dubia; 3, Retinospora ericoides.*—*R. N. H.* *Odontoglossum aspidorhinum*, and *Oncidium Gardneri.*—*G. H. S. 5, Inula Helenium; 7, Senecio japonicus syn. Erythrochate palmatifida; 8, probably a Carduus species not recognised as received; 9, Scabiosa ochroleuca.*—*C. & Son.* We are not able to name the plant from the material sent. It seems a Malvaceous plant, but may be quite different. Send when in flower.—*Phyto. 1, Circea lutetiana; 2, Tagetes nana; 3, Pelargonium "Achievement"; 4, Begonia weltoniensis; 5, B. Marshalliana.*—*F. J., Grimsby.* *Aërides multiflorum.*—*M. A. 1, Vanda coerulescens; 2, V. parviflora; 3, Pleurothallis ornatus.*—*W. C., Bushey.* *Vanda Roxburghii.*—*Exon.* *Oncidium Lanceanum.*—*R. B. W.* *Rosa moschata alias R. Brunoni.*

NECTARINES: *W. D.* Are you quite sure that the mildew is not due in some degree to drought at the roots? We think the injury we saw on the fruits was due to the direct rays of the sun having scorched the skin; and it may be in the identical part that a previous attack of mildew had rendered less capable of withstanding any extreme conditions.

PALMS: *F. S.* The leaves are badly infested with scale insects, and should be thoroughly cleaned with a sponge and a solution of soft-soap mixed with a little Fir-tree oil. Do not report the plants at present, but be careful in the matter of watering, and maintain a moist atmosphere in the house. To encourage growth in the plants you might apply a top-dressing, delaying repotting until the spring those that require it.

PINUS EXCELSA: *Correspondent.* Attacked by a *Chermes*, like that on the Larch and other Conifers. It is very difficult to extirpate. Spraying with petroleum-emulsion if practicable might be of service.

SEA SAND: *A Constant Reader.* Sea sand has been found to be very useful in the cultivation of plants, but it is necessary that it be made free from salt, either by washings or by exposure for a long time on the banks. It is not all smooth, but varies considerably according to the locality from which it is obtained. If Reigate sand can be purchased easily it will answer all purposes even better than sea sand.

COMMUNICATIONS RECEIVED.—*W. H. D., G. R. S., Boston, U.S.; Kelway & Son—R. P. B., A. D., J. O'P., B. B. W., T. L., W. G. S., E. C., E. W., & Son—J. W., Max John, Berlin—J. T. C., Monales Hock, South Africa—C. S., Stockholm—A. G., Anderghem—A. F., Waveren & Kruiff, Sassembum (photograph)—Geo. Bunyard—G. F. T.—W. M., Naples—E. H. J., Rev. D. R. W., D. D., R. D.—J. O'P., E. W., & Son—G. B. M., R.—Constant Reader—J. W., Glasgow—E. P. & Co.—A. B., W. B., J. C., Rayleigh (mashed)—M. Bros., Hull—N. Rother—H. W.—I. S. M.*



THE

Gardeners' Chronicle

No. 920.—SATURDAY, August 13, 1904.

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GROWTH AND REPRODUCTION.*

AFTER discussing and describing the two antagonistic processes known as the "vegetative" and "reproductive" respectively, the authors give their first generalisation as follows: "A decrease in nutrition during the period of growth of an organism favours the development of the reproductive parts while abridging the vegetative parts."

In illustration of the comparative effects upon the "straw" and the "grain" of Wheat by fertilisers, they found, as a result of growing the Wheat upon fertilised and unfertilised ground, there was, as expected, a decided gain in both; but while the increase of grain was considerable, it was by no means so great as the increase of straw, and that the proportion of straw to grain was, in spite of the increased yield, in reality lessened, as seen in the following averages:—

	Weight of Straw.	Weight of Grain.	Proportion of Straw to Grain.
Av. unfertilised...	2,811 lb.	1,540 lb.	1 : 0.55
Av. fertilised ...	3,880 lb.	1,842 lb.	1 : 0.48

Similar differences resulted from treating grain to a short bath of hot water, e.g.:—

	Weight of Straw.	Weight of Grain.	Proportion of Straw to Grain.
Untreated ...	3,737 lb.	1,716 lb.	1 : 0.46
Hot-water bath ...	4,555 lb.	1,908 lb.	1 : 0.42

They then note the common fact that "wild plants rooted in thin soil on rocks often bear single flowers as large as all the

remainder of the plant." "The poorer the conditions for growth, the more effort the organisms put forth towards seed-bearing. . . . It would seem to imply that the weakest and least favoured individuals, being most fruitful, are most likely to be perpetuated, in evident contradiction to natural selection."

But another factor comes into play as a corrective, and that is expressed by the authors' second generalisation — "Large seeds produce stronger plants, with a greater capacity for reproduction than small seeds of the same kind." It was formerly thought that it was immaterial whether the seeds were small or large, and the opinions of Sir J. Banks, Haberlandt, and others are quoted. Experiments with various grains, Peas, Beans, &c., have incontestably proved the fact that large seeds not only give rise to stronger vegetative growth, but to greater fertility. Thus Marck took three sizes of English Beans, and planted them April 24. Their growth was noted up to maturity on July 12, with the result that the larger the seed the taller the stems and the more numerous and larger the leaves. The offspring of the larger seeds exerted a greater force also in piercing the soil.

"Lehmann separated Peas into three grades, large, medium, and small, planting 528 seeds of each. The larger seeds were possessed of greater inherent strength than the smaller, the number of seeds growing from each lot being 480, 478, and 423 respectively. The resulting produce is shown as follows in grains:—

	Peas.	Pods.	Vine.	Total.
Large ...	1,814	437	3,170	5,421
Medium ...	1,495	357	2,630	4,482
Small ...	998	280	2,010	3,288

The proportion of Vine to fruit is—for large, 1 : 0.71; for medium, 1 : 0.70; and for small, 1 : 0.64.

Similarly with Indian Corn, the product of fifteen plants (6 grains weighed over 400 milligrams, and nine under 300 each) gave a greater average weight of ears for the large than for the small seed; the average weight of the cobs from large seed being 53 grams; that from small seeds, 47.

To test the question whether the result would be different if the seeds were planted according to weight instead of number, as this would tend to crowd the smaller seeds if all three kinds were sown on equal areas, Lehmann found that the harvest was greatly in favour of the larger seeds, both per area and per plant, as the following statistics prove:—

	Per Area.	Per Plant.
Large ...	2,307 grms.	6.40 grms.
Medium ...	2,224 "	4.40 "
Small ...	1,590 "	2.34 "

The authors' remark upon this, that "a practical lesson is very pointedly brought out here, that in sowing farm-seeds the amount of the harvest depends quite as much, and it may be more, upon the size of the individual seeds as upon the weight or measure sown per area."

"Is it not apparent that large seeds show great superiority over small seeds in numerous requirements that enter into successful plant life? It is especially noticeable that in this display of greater vigour both vegetative and reproductive parts are benefited: and while the individual plants are making a more successful fight in promoting their present welfare they are enabled to provide

more abundantly for the next generation by producing a better crop of seeds."

These properties the authors regard as first "acquired from external conditions," and then "hereditary, from the energy stored in the seed."

They give their third generalisation as follows:—"Large seeds give rise to plants with a greater development of the reproductive parts and uses of vegetative parts than small seeds do."

This was established by Lehmann's experiments, which showed that the larger seeds not only grow into larger plants, but those which have fruiting parts more strongly developed, they also produced those which have fruiting parts more strongly developed than the associated vegetative parts."

Similarly Marck found with Peas that the weight of Peas of first quality was nearly three-fourths of the whole harvest raised from large seeds, and only about one-third of that from small seeds: thus—

Weight of Peas (grams).

		1st quality.	2nd quality.
Large ...	...	1,375	554
Small ...	...	540	1,045

In conclusion, the authors say:—"It seems reasonable to assume that in the ultimate analyses we are dealing with acquired and inherited tendencies. . . . As the food-supply is lessened, a greater effort is made on the part of the parent plant to enhance the chances for perpetuity; but at the same time the largest seeds, having the greatest potentiality, stand the best chance in the future struggle; and although the best-nourished plants produce the fewest seeds, their greater size gives them decided advantages over seeds from starved plants. The two laws acting together, therefore, aid in maintaining the perpetuity of the species and its full measure of vigour."

It may be added that when some experiments were made at Chiswick to test the Jensen method of protection against the Phytophthora, it was found that those rows which had been planted with whole Potatoes produced a greater produce than was the result of cut portions. Both with these and large seeds the *rationale* appears to be that the young plant being more highly nourished in both cases gets a good start, which enables it afterwards to take the lead, as described in the above paper. *George Henslow.*

FOREIGN CORRESPONDENCE.

ARUM ARISARUM.

In the autumn of 1901 I planted several tubers of *Arum arisarum*, which flowered in the following spring, showing the characteristic bent upper part of the spadix, &c.; in 1903 I saw to my surprise this part of the plant only slightly bent, and the upper part of the spathe not arched but straight. I now marked the place where the plants grew with a stick, and watched them till the leaves had disappeared in December. This spring, when the flowers expanded, there was nothing more to be seen of *Arum arisarum*, the plants differing in nothing from *Arum italicum*. The latter species I have not in my garden, so crossing is impossible; besides, it does not occur in the vicinity of this place. I think this note may interest your readers. Has anyone seen a similar phenomenon? Correspondence invited. *M. Buysman, Middelburg, Holland.*

* Essay by Messrs. J. C. Arthur and D. T. MacDougal, New York. [The heading is our own. Ed.]

ORCHID NOTES AND GLEANINGS.

CATTLEYA × GERMANIA SUPERBA.

THE crossing of *C. granulosa* Schofieldiana and *C. × Hardyana* by Messrs. Charlesworth & Co., Heaton, Bradford, resulted in a very showy batch, varying in point of colour, but always desirable. In the variety *superba*, of which a fine inflorescence is sent by Captain G. L. Holford, Westonbirt, Tetbury (gr. Mr. H. Alexander), it appears at its best. The flower is like that of *C. × Hardyana*, rendered firmer in texture and consequently more lasting by the influence of *C. granulosa*, whose features are strongly displayed in the deeply-cut side-lobes of the lip and in the long isthmus which divides the front from the basal portion. The sepals, petals, and side-lobes of the lip are lilac-purple closely veined with rose-purple; the crimped and fringed front lobe of the lip purplish ruby red.

SOPHRO-LÆLIA × LÆTA ORPETIANA.

A flower of this fine hybrid, for which he received an Award of Merit at the Royal Horticultural Society, March 25, 1902, is sent from the collection of Captain G. L. Holford, Westonbirt, Tetbury (gr., Mr. H. Alexander). The flower, which is of a vivid purplish-crimson, with yellow base to the lip, measures $3\frac{1}{4}$ inches across, and the petals are each $1\frac{1}{4}$ inch wide. The shape of the flower is similar to that of *Sophranitis grandiflora*. The plant is of dwarf habit, and the flowers proportionately very large and brilliant.

CORYANTHES SPECIOSA.

The remarkable genus *Coryanthes* is not common in cultivation, though examples are occasionally seen in flower at Kew and elsewhere. The annexed figure (fig. 44) shows part of a four-flowered inflorescence of *Coryanthes speciosa*, which formed a conspicuous object in the group exhibited by Messrs. Hugh Low & Co. at the last Temple Show. It is interesting as being the original representative in the genus, and indeed dates from 1827, when it was described and figured in the *Botanical Magazine* (t. 2755) under the name of *Gongora speciosa*. The plant had flowered in the collection of Richard Harrison, Esq., of Aigburth, Liverpool, in May, 1827. It is said to have been sent from Victoria Hill, above Bahia, by Henry Harrison. The genus *Coryanthes* was established four years later to include the present plant, *Gongora macrantha*, and a novelty which had flowered in the Liverpool Botanic Garden, which received the name of *C. maculata* (*Botanical Magazine*, t. 3102). The generic name, signifying "helmet-flower," is admirably descriptive. Messrs. Low's plant was introduced from Pernambuco, and agrees precisely with the original. The prevailing colour may be described as light yellowish-brown. The scape in this instance is erect (whether because tied up or not is uncertain), but the flowers have assumed their normal pendulous position. In the original figure both scape and flowers are drawn as erect through some misapprehension, for Mr. Harrison's gardener is said to have observed that the cup at the base of the labellum was rapidly filled with "honey" (as the watery fluid secreted was then supposed to be), which would have been impossible in the position shown in the drawing. The species is very nearly allied to the variable *C. maculata*, and Lindley remarks that the hood affords the surest mark of recognition, being almost exactly hemispherical in *C. speciosa*, but distinctly curved forwards in *C. maculata*. The economy of this remarkable genus has already been detailed in these pages (1882, i., p. 593; 1884, i., p. 482; 1885, i., p. 144; ii., p. 103). As regards culture, it may be briefly said that they succeed when grown in baskets suspended in the warmest house under the same treatment as given to Stanhopeas. *R. A. Rolfe*.

SOME NEW BULBS.

SCILLA BIFOLIA PALLIDA "CHARMER."—Mr. Jas. Allen, of Shepton Mallet, who is best known as a raiser of new Snowdrops, has paid much attention to the improvement of other bulbous flowers. Among those on which he has worked have been the *Scillas*, flowers in which there is a good deal of room for improvement. Among the varieties of *S. bifolia* raised by him is a very pretty form of *S. b. pallida*, which he calls *Charmer*. It resembles the type greatly in its flowers so far as form is concerned, but the blooms are of good size and of a delicate porcelain-blue. It has been a good doer since it came to me in 1902.

SCILLA BIFOLIA "NYXIE."

Another pink-flowered seedling of Mr. Allen's raising is *Nyxie*, which is even finer than *S. b. Pink Beauty*. It opens a little later, and has rather deeper-coloured blooms on opening than those of the latter. It is also of dwarfer and neater habit, and holds its flowers well up to the eye. Last season it was exceedingly beautiful.

SCILLA BIFOLIA "PINKERTON."

While in several respects greatly inferior to *Pink Beauty* and *Nyxie*, *Pinkerton* has much deeper-coloured blooms than these two, and it blooms a little later than either. The flowers

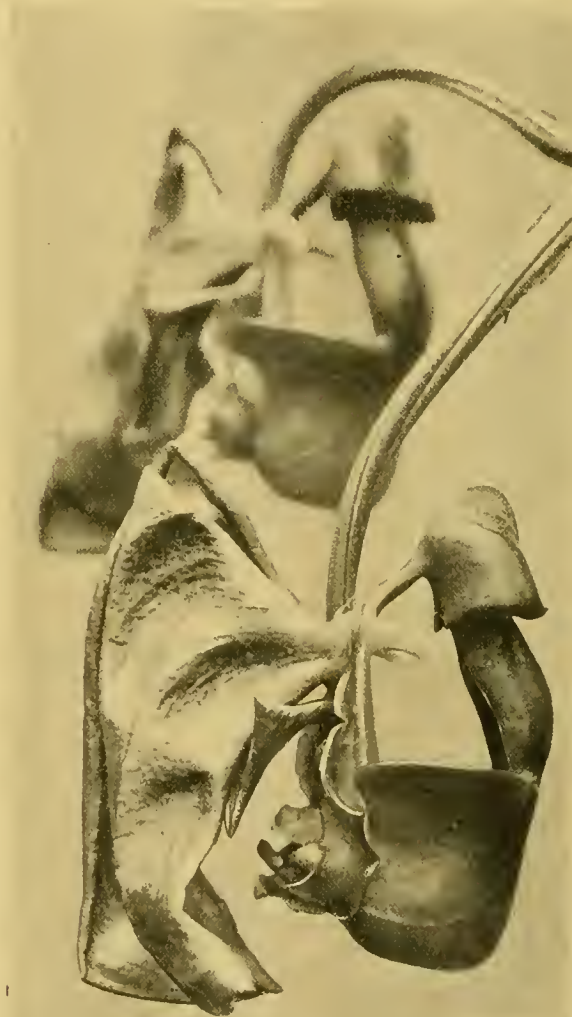


FIG. 44.—CORYANTHES SPECIOSA.

SCILLA BIFOLIA "PINK BEAUTY."

It is well known to those who grow the pink and flesh-coloured forms of *Scilla bifolia* that these do not seed so freely as the blue forms, while they appear also to be less free in their growth, especially the original *S. b. rubra*, which is now scarce. Mr. Allen, however, has been more successful than many, and he has selected several pink forms from his seedlings. Of the three of these in my garden *Pink Beauty* is the earliest, while it is not only of a pretty true pink, especially just after opening, but it has also larger and better formed flowers than the variety of *S. bifolia* called *rubra*. It is, indeed, among the best of all the forms of *S. bifolia* in cultivation, and much better than the white or flesh-coloured varieties in commerce.

are, however, considerably smaller and more starry in form, while the habit is not so good as either of the foregoing. Still, its bright pink colour, fading less after being open for some time than that of *Nyxie* or *Pink Beauty*, makes it an acquisition. I have had it since 1901, but it has increased but little in that time.

CHIONOSCILLA SPHINX.

These hybrid *Chionoscillas* are very interesting plants, and the best of them are exceedingly attractive in their season. Of a few named ones I have here, all raised by Mr. Allen, I prefer upon the whole that called *Sphinx*. It has large, well-formed flowers of an indescribable shade of blue, with perhaps a touch of lilac about it, and without the white eye which exists in the greater

number of these *Chionoscillas*. It was apparently raised between *Chionodoxa sardensis* or *C. Luciliae* and *Scilla bifolia*. One would think from the colour that it was from *C. sardensis*, but its sturdy habit is more what one would expect in a hybrid between *C. Luciliae* and *S. bifolia*.

X CHIONOSCILLA PENYI.

This is a capital plant with good-sized, well-formed flowers of a deep blue, with a small white eye. It has done well since I got it in March, 1902, although it has not increased much as yet. With the preceding and succeeding one I should include it among the best three of the *Chionoscillas* I have grown here. Its flowers are of good size, well formed, and freely produced on fairly

SEEDLINGS FROM THE CHIONOSCILLAS.

A few years ago Mr. Allen kindly sent me some seeds from his *Chionoscillas*. These were duly sown, and all have come into bloom, some for three years at least. Mr. Allen had been studying the *Chionoscillas* before, and had found the same results as have been given me in my growing the seedlings from his seed. They are a most singular lot altogether. In general the majority hark back to the *Scillas* rather than to the *Chionodoxas*, but a few are true *Chionodoxas*, while still fewer have followed the seed-bearer and are *Chionoscillas*. What one is surprised at, however, is the large proportion of poor *Scillas* among these seedlings. Instead of gaining greater vigour, these have become depauperated,

GREENHOUSE-FURNISHING.

The illustration (fig. 45) gives a fair example of a greenhouse furnished with flowering plants, among which *Hydrangeas* take a prominent part, along with Ivy-leaved *Pelargoniums*, *Campanula isophylla*, *Crassula*, show *Pelargoniums*, and many others, showing what may be done in a mixed collection. The view was taken in the gardens at Arundel House, Maxwell Town, Dumfries.

VEGETABLES.

NEW EARLY PEAS.

AMONGST many novelties in Peas there were some very fine samples, and this has been a season



FIG. 45.—GREENHOUSE AT ARUNDEL HOUSE, DUMFRIES.

stout stems, although it droops a little when in bloom. It was raised by Mr. James Allen.

CHIONOSCILLA ABUNDANCE.

"Well named!" is one's thought on studying this charming hybrid plant, for it blooms freely, while its flowers are in good numbers on each stem. They are a brighter blue than those of *Penyi*, and the small white eye is quite an ornament to the blooms. Then the flowers are well up to the eye, and my small group of flowers from a bulb sent me by Mr. Allen in March, 1902, will please one any time one may be passing the border in which this *Chionoscilla* is grown. These *Chionoscillas* are delightful little plants, resembling more the *Chionodoxas* than the *Scillas*.

and are not worth keeping except for the purpose of practical illustration or experiment. On the other hand, some of the *Scilla*-like varieties are really pretty, and the diversities are quite remarkable. Had I only more space and time at my command, I should like to follow up these and their progeny throughout a series of generations. *S. Arnott*, *Carsethorn-by-Dumfries*, N.B.

KILRUDDERY.—The gardens belonging to Lord MEATH, near Bray, Ireland, were visited on the 27th ult. by a party consisting of members of the Irish Gardeners' Association and Benevolent Society. Mr. and Mrs. BURBIDGE accompanied the visitors, who were conducted round the pleasure grounds by Mr. CHILDS.

to try vegetables, for we had no frost to interfere with the well-being of the seedlings and plants.

The variety *Carter's Eight-Weeks* is very prolific, and in all other respects satisfactory. It contains all the best points of those two good varieties *American Wonder* and *William I.*, and in this season has grown only 2 feet high, whilst all Peas with us have grown higher than usual consequent on the dull weather.

Mayflower is a first early marrowfat, a cross between the famed *Daisy* and *William Hurst*. The haulm is very robust, and pods are freely produced, and altogether it is a most desirable novelty. It is extremely prolific, and well adapted to the requirements of both large and small gardens.

Early Morn.—This famous Pea still holds its reputation, it being the finest of its section. I have it sown by the side of many different varieties, but it well sustains the superiority claimed for it—that of being the earliest marrow. It is a first-rate Pea for exhibition. When grown well it reaches 5 feet in height, but commences to flower at 3 feet.

Lightning has been very good, and was in fact the earliest from which we gathered. It is an abundant cropper.

Victor Marrowfat Pea is another marrowfat, as its name implies. It possesses a combination of many of the most desirable varieties, and its dwarf, bushy habit will win it a front place in dwarf early Peas. The pods are produced in pairs, and this very freely, and the Peas are most delicious. Fine for large or small consumers, and a variety that requires no sticks, which is a great consideration with many near large towns, where sticks form an expensive item.

Dwarf Monarch is another robust variety that comes in after, and forms an excellent succession; bears large pods; blunt-ended, after the Autocrat type; very prolific. Peas a deep green.

Buttercup, a type of Daisy Pea, but a week or more earlier, is a very fine, robust form of Pea, bears freely pods of great length and size in pairs; the pods are of a beautiful green, and the Peas are very rich; it has grown well this season, and very strong. Another variety which need not have sticks; the better if short sticks were used, as the foliage and pods are so heavy they ought to be kept off the ground.

Extra Early Daisy Pea.—This is an early Daisy Pea, a very dense and robust grower; dark foliage, and a wonderful cropper of fine pods.

With such a lot of new varieties, the public in a short time ought to be supplied with good Peas in the market now, though some old varieties die a hard death.

Popular varieties of main-crop include such fine varieties as Torpedo, Stratagem, Edward VII., Model Telephone, Model Telegraph, G. F. Wilson (one of the very best Peas under any and all circumstances), Commonwealth, Battleship. These are all first-class varieties, and worthy of extended cultivation. *W. A. Cook, Shirley Park.*

CAULIFLOWERS.

For early work I find Sutton's "Magnum Bonum" Cauliflower a splendid variety in every respect. From seed sown the latter part of January, I cut beautiful heads, commencing early in June and continuing until the middle of July. Veitch's "Early Forcing," also a fine variety, came in about the same time from seed sown on January 14. I followed much the same method of culture as described by Mr. Ellis, on p. 35, of the *Gardeners' Chronicle*.

SUTTON'S "ALL HEART" CABBAGE.

I sowed seed of this variety early in February, and grew on in gentle heat until they made nice sturdy plants, when they were gradually hardened off and planted-out in March. They have been fit for use now for the past three weeks. This is a fine cone-shaped Cabbage, very tender when cooked. I cut one Cabbage weighing 4 lb. *Geo. H. Head, Kingsdon, Taunton.*

PLANT PORTRAITS.

PEACH "CUMBERLAND."—*Bulletins d'Arboriculture*, &c., July.

ROSE COMTESSE VITALI.—*Flora and Sylva*, August. GLORIOSA ROTHSCHILDIANA.—*Flora and Sylva*, August. See *Gardeners' Chronicle*, May 23, 1903.

DIANTHUS LAUCHEANUS ×, a hybrid between *D. barbatus* and *D. deltoides*, described by Dr. Bolle.—*Garten Flora*, tab. 1528.

RIBES LEPTANTHUM, *Asa Gray*.—A Colorado species, new to German gardens.—*Garten Flora*, August 1, p. 409, abb. 60.

REMARKS ON THE CONDITION OF THE FRUIT CROPS AT THE END OF JULY.

(See Tables and General Summary, ante, pp. 70-76.)

(Continued from p. 90.)

3, ENGLAND, E.

CAMBRIDGESHIRE.—There is a remarkably heavy crop of Apples, Pears, Peaches, and Nectarines, and all small fruits. Owing to the drought many Apples have fallen off, but there is still a very heavy crop of good fine fruit. *R. Alderman, Babraham Gardens, Cambridge.*

ESSEX.—Apples are a tremendous crop in this part of Essex, the fruit being clean and very promising in appearance, and the trees healthy and vigorous. The crops of Plums and Pears generally are not so heavy as they promised to be some weeks ago. Young trees (pyramids) of Beurré d'Amanlis, Beurré d'Aremberg, Beurré Diel, and Durondeau are carrying good crops of clean fruit. Monarch Plum is fairly well cropped. I never saw a finer crop of Strawberries than we had grown on a deep loamy soil sloping southward; the variety was Royal Sovereign, and the fruits were of immense size and of fine quality. *H. W. Ward, Lime House, Rayleigh.*

LINCOLNSHIRE.—There was a wealth of blossom, although it came late, and at first one thought crops would be over the average for all kinds of fruits; but a cold spring, and the ground—a brown loam upon a variable bottom, principally ironstone and clay—remaining wet and cold quite late in the spring, together with an unfavourable autumn for ripening the wood previously, account for some of the crops being under the average. Peach-blossom was small, still it set; but many of the young fruits eventually fell off. Currants and Gooseberries are a grand crop. Apples are splendid—abundant, and of good quality. Pears suffered much from the Pear-midge, still they are an average crop. *H. Vinden, Harlaxton Manor, Grantham.*

—The Apple crop is heavy. Pears are not abundant, although the samples are very good. Plums are bad. Cherries are an average crop, but of bad quality. Peaches and Nectarines are very good, and highly coloured. Apricots are about the average. Gooseberries and Red, White, and Black Currants have very heavy crops, and the samples are good. Strawberries and Raspberries are both good. Filberts and Cobnuts are very scarce. The Walnut-trees in the park have an average crop. Water has had to be used freely. *F. J. Fleming, Weelsby Old Hall Gardens, Grantham.*

—From the soft, unripened condition of the wood noticed at pruning-time, I expected poor returns from the fruit-trees this season. However, the unexpected has happened; we had the most perfect weather when the trees were in bloom, and the Apple crop is with me a record one for the eighteen years I have had charge here. The soil is a pure blue clay; the situation well sheltered from north and east. *J. Coward, Haverholm Priory, Steaford.*

NORFOLK.—The season 1904 will probably furnish us with a record year for fruits, with the exception of stone fruit, which suffered greatly from sharp winds and cold nights at the time of flowering, followed up by sharp attacks of insect-pests, and in places mildew. Possibly the wood being in such an unripened condition, the trees had less resisting power than usual. Stone-fruits in some places are very good, in others very bad. Apples are falling very largely, on account of the drought; but a third can be spared with advantage. Strawberries were the best crop for many years, and of high quality, although some crops mildewed badly. Black Currants were a heavy crop, where bullfinches did not damage

the trees in winter. Other bush fruits have also been very satisfactory. Our soil is mainly light and sandy in character. *E. C. Parslow, Shadwell Court Gardens, Thetford.*

SUFFOLK.—The fruit crops in this district, with one or two exceptions, are excellent. Most varieties of fruit set well, but the continued dry weather since the beginning of June caused a quantity of fruit to drop. Still there is a heavy crop. Such varieties of Apples as Bramley's Seedling, Lane's Prince Albert, Peasgood's Nonsuch, and The Queen are amongst the best. Pears on the whole are good. Plums are variable; the crops on trained trees are fairly good, but on standard trees the fruit is thin and foliage much blighted. The Apricot crop is thin. Peaches and Nectarines set well, but there is only an average crop; some of the trees are much affected with blight. Strawberries have borne an enormous crop, and the fruit of good quality. The variety "Leader" is the favourite amongst market growers in this district. With the exception of Black Currants, small fruits are abundant. Figs (outdoors) are doing well this year. In this district, except on the borders of the Waveney Valley, the soil is of a close, tenacious character, resting on a clayey subsoil. After heavy rains the surface, under the influence of a bright sun and a drying wind, becomes quite hard, which can only be remedied by a speedy application of the Dutch-hoe amongst the growing crops. *H. Fisher, Flitton Road, Bungay, Suffolk.*

—In this district we have many kinds of soil. Crops on sand and gravel are suffering from drought; on the moor and clay fruit is doing well. There are a few Plums in places, but the Plum crop as a whole is very small. Black Currants are better this season than usual. Potatoes are suffering very much from want of rain; we have not yet been able to earth them up. *H. W. Nutt, East End Farm, Flitwick.*

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—The fruit crop in this district, taken collectively, is an excellent one. Strawberries and all small fruits are record crops, but suffered from the prolonged drought, the rainfall from May 21 to the end of July only amounting to 1.1 inch. The excessively dry atmosphere has also caused Apples to drop freely. The soil is a very heavy loam, overlying a deep bed of gault. *Henry Nimmo, Cranfield Court Gardens, Woburn Sands.*

—The fruit crops in the gardens here give promise of a fair average, except Apricots. Should the drought continue, I am afraid a great many of the Apples and Pears will fall, as our soil is very sandy. *W. C. Modral, Old Warden Park, Biggleswade.*

—The fruit crops in this district are looking much better than they have done for the past three seasons, with the exception of standard Plums, which are rather below the average this year owing to late frosts when they were in flower. Small fruits in the neighbourhood are looking very promising, and we anticipate a most bountiful crop. The Strawberries in this district have never given the grower such good returns as they have this past summer. The soil is mainly a good loam on a subsoil of chalk and clay, other parts consisting of a stiff clay, which is very suitable for the cultivation of Strawberries. *George Mackinlay, The Gardens, Wrest Park, Amphill.*

BUCKINGHAMSHIRE.—The prospects of a good fruit year were never brighter than in the spring of 1904. Fruit-trees of all kinds were covered with blossom, and no sharp frosts came to destroy the bloom. The drying easterly winds in early June were in a great measure responsible for the damage done by fruit pests this year. The young shoots of Cherries, Damsons, and Plums

were crippled, and the leaves curled, which may be the cause of many of the fruits falling. Pears are a scanty crop. Apples are abundant. Gooseberries are a good crop, although the mite has been troublesome in some gardens owing to the dry weather. Red and White Currants are good where the aphides has been kept down. Strawberries are abundant and of good flavour. The soil about here is mostly a loamy gravel, very favourable to most fruit crops. *John Fleming, Wexham Park Gardens, Slough.*

— After two bad seasons, fruit-growers have promise of a good fruit year. The only light crop in this neighbourhood is Pears, which, owing to that destructive pest the Pear-midge, will not be more than half an average crop, although I notice the variety Josephine de Malines has escaped this pest. Apples are splendid, the fruits being clean, and promise to colour well; all the varieties are cropping splendidly, and thinning has been a big task. Plums are good. Peaches and Nectarines excellent. Strawberries were of good flavour, but the season for these has been a short one. *Chas. Page, Dropmore Gardens, Maidenhead.*

— The fruit crops in this district are very good indeed. Apples are abundant; Pears are about an average crop, promising at the present time to be of fairly good quality. Plums vary considerably in different places, those trained on walls are very good. Cherry-trees trained on walls are carrying good crops, the varieties Elton, Black Circassian, and Bigarreau Napoleon are excellent sorts, which follow each other in rotation in ripening. In the orchards in this locality, a variety named Black Bud is extensively cultivated for market purposes, the fruit keeps well and is not liable to crack. Peaches and Nectarines are very abundant. Waterloo is generally the first to ripen. Waterloo, Amsden June, and Alexandra will soon be ripe. Ilale's Early will follow, to be succeeded by such later kinds as Sea Eagle, Princess of Wales, and Princess. In this neighbourhood hills and valleys abound, the soil being fairly good for fruit cultivation in the latter. It consists generally of a good rich loam, in which fruit-trees do well. Chalk prevails in some districts and crops up to within a foot of the surface, rendering the land unsuitable for fruit-growing. The uplands abound with strong loam and clay, on which Apple-trees, especially such kinds as Blenheim Orange, do well, and produce excellent crops of fruit. *Geo. Thos. Miles, Lord Carrington's Estate Office, High Wycombe.*

— Our soil here is very cold and heavy, and bad for the cultivation of some kinds of fruit-trees, much of the wood not ripening unless the season is warm. Apples are an average crop, and on the whole good. Pears are scarce, and the quality inferior. Plums are under the average, there being in some orchards no crop at all. The quality of all bush fruit is excellent, and the crops are heavy. Strawberries have yielded the heaviest crop known in this district for many years, and the quality is good. Nuts are an average crop, but the trees are blighted in places. Peaches are carrying a fair crop, but earlier in the season the trees suffered much from "blister," from which they are now recovering and making satisfactory growths. This has been an exceptional season with us, from the fact that we escaped the usual late frosts—a rarity in this neighbourhood. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

— The Apple crop is enormous and has required thinning twice. Pears set well, but a lot of the fruit has fallen. Plums are not so good as first promised. Strawberries have been an enormous crop, the fruit—especially on last year's layers—being of very fine quality. The intense heat toward the end of the season brought the Strawberry crop to a premature close. *H. Walters, Waddesdon Gardens, Aylesbury, Bucks.*

To be continued.)

DECAYED ELM.

At p. 11 of the *Gardeners' Chronicle* for July 2, "J. M." gave us an account of a Holly tree. I had the good fortune to see what had once been a splendid Elm on an estate about a mile from Baileygate; it had, I presume, been struck by lightning at perhaps 30 feet from the ground, stripping off all the bark except three narrow strips, which remained uninjured to about 20 feet. These obtained a supply of water from the root, and thus life was sustained until new branches could be formed. How long since it took place I cannot tell, but it must have been many years ago. Life in the bark is still kept up, and now it has a very nice head of living

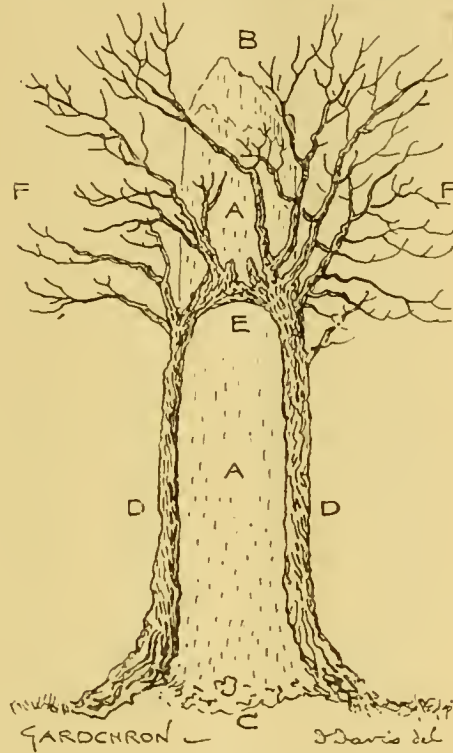


FIG. 46.—DECAYED ELM.

A A, dead trunk, its top, B, broken off at a height of about 30 feet; C, base, hollow and rotten; D D, live bark; E, coalescence of strips of live bark; F F, young branches growing from D and E.

branches, but the trunk is completely dead, and has been so for many years. The base is rotten and undermined by rabbits and other vermin. *D. D., Bournemouth.*

PLANT NOTES.

BOWKERIA TRIPHYLLA.

A SMALL specimen of this rare South African Scrophulariaceae shrub is now in flower with me in the open. I only know of it in one other garden, which is situated on the undercliff in the Isle of Wight. In that garden there are two specimens, the largest of which is about 7 feet in height. When I was there on July 1, both were bearing buds. My little plant was raised from the largest of these. It is barely 18 inches in height, but has one expanded flower and two buds. The flower is pure satiny-white and shaped somewhat like that of a *Calceolaria* with a hood and lip. In size it is just 1 inch across and measures the same from the top of the hood to the base of the lip. The lip protrudes very little, being only a $\frac{1}{4}$ -inch in depth. The flowers are borne singly at the axils of the leaves on pedicels about $1\frac{1}{2}$ inch in length. The leaves are corrugated and shiny on the upper surface and are 5 inches in length and $1\frac{1}{2}$ inch in breadth.

MUTISIA DECURRENS.

This gorgeous climber is now in flower with me. The large blossoms, which are $4\frac{1}{2}$ inches across, are somewhat like those of a glorified *Gazania*, but are more graceful in form and brighter in colour. The recurving ray-florets give the flower a very elegant effect, and the rich orange colouring is exceptionally bright, indeed in the sun it appears tinted with scarlet. This *Mutisia* is rarely seen in gardens, and is difficult to procure. A friend told me the other day that he had been vainly endeavouring to obtain a plant for three years. I had one three years ago, which died, and for a year and a half I was unable to get one to replace it; however, in the spring of 1903 I received two plants from different sources almost simultaneously; these were planted in a foot of loam, peat, and sand over a deep layer of broken bricks and stones, for I was led to believe that my first plant died from stagnant moisture at the root. Behind them was the gable end of a little building facing south-west, on which wire netting was tightly strained. Over the wire-netting a plant of *Polygonum Baldschuanicum* was trained, and the *Mutisias* were planted one at each side of it and left to their own devices. They elected to grow up behind the *Polygonum*, and when the leaves of the latter fell were seen to have gained a fair stature. They continued to grow the whole winter, and finally emerged, one on each side of the top of the gable, rather over 6 feet from the ground. Here, two twiggy, dry branches were firmly fixed, which the *Mutisias* soon clung to with their tendrilled leaves and commenced to form buds. Twelve of these were produced, which have been and still are very handsome. The plants get the sun from 11 A.M. till 3.30 P.M.

LONICERA HILDEBRANTI.

I lately visited Robert Veitch & Son's nursery at Exeter, and amongst many other interesting things saw this giant Honeysuckle in fine bloom in a glasshouse. I cut a couple of bloom-trusses to take home with me, and found on measuring the perfect flowers that they were 5 inches in length, and nearly 3 inches across the open mouth. The blossoms are bright yellow in colour and very fragrant. I know of five plants doing well in the open in the South-West, and I myself have one growing against an open wall, which is doing well, but as it was only planted out this spring it is too early to speak confidently as to its succeeding (see *Gardeners' Chronicle*, September 17, 1898, p. 219). *S. W. Fitzherbert.*

TREES AND SHRUBS.

THE POPLAR.

EVERY traveller through France knows too well the monotonous straight lines of Poplars, and perhaps tries to find compensation for their ugliness in the notion that they are a valuable asset to the rural population. And so, indeed, they are, as anyone may see for himself who will consult an excellent work, entitled, *Un Arbre Utile, le Peuplier*, par L. Breton-Bonnard (Paris: Rothschild; 5s.). The author does not confine his remarks exclusively to one species of *Populus*, but mentions and describes all that are in cultivation, and as his descriptions are illustrated with cuts, the value of the book is obvious. After the description of the several species and varieties, the author goes on to discuss the cultural details connected with planting, reproduction, general management, diseases and injuries of the trees, and their economic value. It is thus a most comprehensive treatise, which may be commended to the attentive consideration of all planters.

DECIDUOUS TREES.

Under the title of *Handbuch der Laubholzkunde*, Mr. Camillo Karl Schneider has published the

first part of a full descriptive catalogue of the trees and shrubs native to, or cultivated in, the open-air in Central Europe, together with the Bambuseae and the Cactaceae. It is in the German language, with very numerous contractions and symbols which make it rather irksome to consult. The necessity for economising space has rendered this condensation unavoidable, as may be judged from the circumstance that no fewer than sixty-two species of Willow (*Salix*) and twenty-three of Poplar (*Populus*) are enumerated, together with varieties and hybrids. The value of the book is largely increased by the very numerous illustrations, which will be of great service in facilitating the determination of the species even in the absence of leaves. The part before us contains the Salicineae, Myricaceae, Juglandaceae, Betulaceae (in which *Corylus* is included), Fagaceae, including Castanea and Pasania. The adoption of such names as Castanea Castanea should not pass without protest. It is rather startling also to find some of the Japanese Oaks removed from the familiar *Quercus* to the little-known Pasania. Admitting the desirability of making a distinction surely all requirements would be met by retaining the almost universally adopted *Quercus* and making Pasania a subgenus or section. But any amount of eccentricity may be pardoned in individuals, so long as others are at liberty to adopt or to ignore the changes of nomenclature as they please! It seems impossible to induce gardeners in general to abandon the use of the word "*Geranium*," which is absolutely wrong, so that we have little expectation that they will adopt Pasania. This differs from *Quercus* only in a few minor technicalities, the importance of which will be estimated differently by different botanists. Let us hope that the Vienna Congress, to be held next year, may uphold and amend, where proved to be necessary, the rules laid down at Paris in 1867, and save our successors from the distressing vagaries of nomenclature now rampant. In any case, there is every reason to praise the thoroughness of the work before us, which may be had from Williams & Norgate or other foreign booksellers.

A NEW PITTOSPORUM.

M. Yoshida, in the *Journal de la Société d'Horticulture du Japon*, gives a figure of a new *Pittosporum*, *P. illicioides* of Makino, found wild in the province of Harima. It is a handsome evergreen shrub, resembling in external appearance the *Illicium anisatum*, having shining green leaves and umbels of greenish-yellow flowers. We infer that it will be hardy in this country, at least in the south.

BOOK NOTICE.

THE CLASSIFICATION OF FLOWERING PLANTS, by A. B. Rendle, M.A., D.Sc., &c. Vol. I. Gymnosperms and Monocotyledons. Cambridge University Press.

This is a book whose advent will be hailed with acclamation by those who are desirous of estimating the influence on our systems of classification of the more recent discoveries in the minute anatomy of plants and in the construction of cells, and by those who are interested in ascertaining to what degree our ideas as to the relationships of plants must be influenced by the study of the anatomy of fossil plants. We may expect that the clues originally furnished by Hofmeister from the comparative study of development in Cryptogams will be largely increased in number by the investigations of Williamson, Scott, and others in the comparative anatomy of fossil plants. For this reason we are glad to find in the present volume details as to the structure of certain families of plants now extinct, such as the Cordaites and the Bennettitaceae, groups allied to the Cycads. These details are comparatively inaccessible to the student of recent systematic

botany, but they are of great importance from a systematic point of view.

Whether the details relating to pollination, such as dichogamy and various other methods of fertilisation to which Dr. Rendle devotes some pages, have any but subordinate value, so far as classification is concerned, may well be doubted. Their importance seems to be rather physiological and adaptive rather than genealogical, and if this be so, whilst they would fitly find a place in a treatise on physiology, they are not looked for in a treatise on classification.

Dr. Rendle follows the arrangement proposed by Engler, which is probably the one most in harmony with the present state of knowledge; and at the end of each principal section he gives a list of the more important books and memoirs cited, a list which, had space permitted, might usefully have been extended.

In treating of the Orchidaceae, Dr. Rendle follows the arrangement proposed by Pfitzer, dividing the Order first of all into Diandrea with two stamens (including Aspostasinæ and Cypripediæ), and Monandrea with one stamen only as in the great majority of the Order. This large division is then subdivided into two, Basitonæ and Acrotonæ. The Basitonæ have the pollen masses (pollinia) stalked, the stalks or caudicles are at the base of the pollinia, and the anther is persistent. This group includes the Ophrydiæ. The Acrotonæ have the pollen-masses either without stalks or caudicles, or, if there is such an appendage, it is at the apex of the pollinium, and the anther is deciduous. This subdivision comprises the remainder of the Order, and is further subdivided into some twenty-eight tribes and a large number of genera, the distinguishing characteristics being such as are most readily appreciable by the Orchid-grower such as the terminal or lateral character of the inflorescence, the "vernation," or way in which the leaf is rolled up in the bud, the development of the stem, and the form and relative size of the lip.

In a final chapter Dr. Rendle gives a "general review," in which the kinship of the several orders and their derivation from one another or from a few primitive types is discussed. This, though highly speculative, is very interesting, and so long as its suggestive nature is recognised, and it is not looked on as dogmatic, it will prove valuable by stimulating further research, and thus increasing our knowledge. Numerous illustrations and an excellent index add to the value of the work. We heartily congratulate the author on the partial accomplishment of a difficult and laborious task. The part before us does but whet our appetite for what is to follow.

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Raspberry-canes.—As soon as these have finished fruiting, the nets which have been employed for protecting the berries from birds should be removed, and, when dry, neatly folded up, labelled as to size, &c., and, if not required for use again this season, put away in a dry, airy shed, where they will not get damaged. I usually hang them from the roof in a lofty shed near the stoke-hole, where they are nicely out of the way, and kept dry throughout the winter months. After removing the nets, go over the beds and cut out the canes which have borne fruit, taking care to draw them out without damaging the leaves of the remaining canes more than can be helped. The prompt removal of the old canes gives the younger ones a better chance to develop more fully, and the additional sun and air admitted will assist the ripening of the canes, and greatly increase their productiveness. After removing the worn-out canes and any of the young growths not required for stock, &c., clean the land of weeds and rubbish; and if the weather continues

dry and warm, apply a fresh mulch of manure. One or two good soakings of water will also be very helpful. Autumn-fruiting kinds, such as Belle de Fontenay, &c., sometimes produce a nice crop of large fruit late in the season, which, if not of very high flavour, is useful as a change. These latter kinds should be kept moderately thinned, and mulched if the soil is shallow and dry about the roots. Net them over early, and when the fruits are ripe gather them daily. In damp weather the berries quickly decay.

Cherries.—May Duke, Governor Wood, Kent Bigarreau, Napoleon Bigarreau, and Early Rivers have been our heaviest croppers this season, the trees all bearing well. All the fruits, with the exception of Napoleon Bigarreau, have been gathered, so that the trees may now be gone over after removing the nets. All foreright shoots should be cut back to within four buds of the base, and these leaders, which have almost completed their growth, should be made secure to the walls or trellises. As soon as tying, &c., is finished, use the garden-engine to thoroughly cleanse the foliage and the trees generally.

Young Orchard-trees.—It will be advisable to go over all the newly-planted trees and examine the ties. Any that are too tight must be loosened and retied, otherwise harm may be done to the trees. Water the roots of any trees that are suffering from drought.

Nuts.—Bushes, especially young ones, should be duly thinned in the centre, and any soft, spongy growth or suckers removed. In Kent, where many acres of land are devoted to Nut culture, the bushes are kept well open in the centre, and are trained vase-shape to about 7 feet in height. The branches are kept furnished with small shoots, which in good seasons bear enormous crops of large Nuts.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Calogyne cristata.—Among late winter and early spring-flowering Orchids, *Calogyne cristata* and its varieties maxima, "Chatsworth," Lemoniana, and the pure white hololeuca, are all useful plants for cutting and decorative purposes generally. As these plants are now pushing both root- and leaf-growths freely, they will require a gradually increasing supply of water at the roots until the new pseudo-bulbs are fully developed. Although these plants require plenty of moisture at the roots, still a certain amount of discretion in watering at this period is necessary, as the tips of the leaves turn black, and many young growths decay if the plants are kept in a saturated condition. *C. cristata* and its varieties require more water when the new pseudo-bulbs commence to form than at any other time. The coolest end of the Cattleya-house, or a light position in the intermediate-house, is the best position for them. There are numerous varieties of *Calogyne* that should now be repotted if they require it, the more important being *C. asperata* (Lowii), *C. Massangeana*, *C. Sanderiana*, *C. corrugata*, *C. Cumingii*, *C. Dayana*, *C. flaccida*, *C. graminifolia*, *C. pandurata*, *C. speciosa*, *C. tomentosa*, *C. Schilleriana*, *C. barbata*, *C. elata*, *C. ocellata*, &c. A compost of fibrous peat and sphagnum-moss in equal parts will suit the majority of these varieties, but for the stronger-growing varieties a little fibrous loam and coarse silver-sand added to the peat and moss is beneficial.

In the Cool-house such *Oncidiums* as *O. spilopterum*, *O. phalenopsis*, *O. cucullatum*, *O. nubigenum*, *O. dasytyle*, *O. cristatum*, *O. virgatum*, *O. olivaceum*, *O. Lawrenceanum*, *O. Mantinii*, *O. unicorn*, *O. concolor*, *O. varicosum*, *O. Wheatleyanum*, and others that are starting to grow will now require fresh material to root in. All of these grow best in ordinary flower-pots with wire handles attached. They can then be suspended close to the glass in the roof of the house. One-half of the compost should consist of leaf-soil, the other half of peat and moss in equal parts, adding a little coarse sand. Pot them as ordinary greenhouse plants, and cover the surface of the compost with about $\frac{1}{2}$ inch of living sphagnum moss. All the *Oncidiums* mentioned should be kept just moist at the roots during their season of growth. The distinct *Cochlioda Noetziana*, *C.*

vulcanica and *C. sanguinea* should also be repotted now that they are starting to grow. Treat them in the same manner as advised for the *Oncidiums*.

Boilers, &c.—While this summer weather lasts a good opportunity is afforded to have the heating apparatus thoroughly overhauled and put in working order for the winter season. The boilers and pipes should be emptied and cleared of all sediment; they should not be left empty, but refilled at once. Cracked sockets and loose joints in the hot-water pipes should be made good, all valves and air-taps should be oiled, and the overflow and feed-pipes put in order. The flues round the boilers, fire-bars, and ash-pit doors should also receive attention. Where it is found necessary to put in additional pipes, valves, &c., the present time is best for such work to be done. While operations are in progress the plants in the hottest houses should be kept on the dry side, and less atmospheric moisture is needed than when everything is in full working order.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenharn.

French Beans.—In some of the Southern Counties a few of these may now be sown on a well-sheltered border with a south aspect, arranging the lines so that frames can be placed over them when there is any danger from frost. In places where the supply has to be kept up without a break it will be advisable to make a sowing in pots out-of-doors. These can be removed to the forcing-pits when the outside temperature becomes unsuitable. Keep plants in bearing well picked, for if some of the pods are allowed to grow and become stringy, the plants soon get exhausted. The same remarks apply to Scarlet-Runners, which should be kept close picked to insure a supply for a long period. See that the plants are well mulched, and kept moist at their roots.

Cabbage Sprouts.—In a previous Calendar we advised keeping some of the old Cabbage stumps for sprouting in places where they were likely to be required. In some gardens where space is limited these are often depended upon for a supply. Cabbage being a gross feeder, soon impoverishes the soil, and unless it is replenished the returns will not be satisfactory. Now the soil is moist after the recent rains, apply a thorough mulching of rich manure, covering the ground between and round the stems with manure at least 4 inches deep. This will conserve the moisture, and if water is given when the mulching is completed it will wash in the manure and benefit the roots.

Carrots.—In gardens where a continuous supply is required, make a sowing of Early Horn on a border well exposed to the sun. Arrange this sowing so that frames can be placed over them for protection in the autumn.

Asparagus-beds.—At this season the beds are too often neglected. Those situated in a moist place that were well mulched, as previously advised, will not have taken much harm, but during dry weather the birds often by scratching expose the roots. Where such is the case, put on fresh mulching, working it well between the stems, taking care not to injure them. If at times liquid-manure, guano-water, guano dusted between the growths over the bed, or a dressing of salt be given, they will stimulate the roots. Care should be taken when using them to remember that a little at a time and often is the proper manner to apply all artificial manures.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Gesneria exoniensis.—The flowering season of this showy winter-blooming plant may be extended to the early spring by starting the tubers in successional batches. It is, however, useless to attempt to start them into growth until they have been thoroughly rested; the tubers, though potted-up and placed in the stove, cannot be induced to start much before their proper season. It is by retarding the tubers that the flowering season may be most easily prolonged, the latest

batch being kept back until the plants exhibit signs of starting into growth. Tubers which have been rested since the spring may be started now. Let them be potted singly in 3-inch pots, keeping the top of the tuber about $\frac{1}{2}$ an inch below the surface of the soil. A suitable compost may consist of sand, loam, and leaf-soil in equal parts. Place the pots in the stove, and afford water sparingly until growth commences. In order to preserve the beauty of the foliage, the syringe should not be used overhead. When the roots reach the sides of the pots the plants should be placed in 5-inch pots, and subsequently some of the strongest may be shifted into pots a size larger.

Begonia socotrana.—Prior to the introduction of the newer varieties of winter-flowering Begonias, one was always endeavouring to induce this species to flower in the early part of the winter, but the necessity for this no longer exists, and it is now most useful when in bloom at its proper season, which is from about the middle to the end of winter. A portion of the stock may be started now, and the remainder in a month's time. Let the clusters of bulbils be divided into smaller clusters of about six or eight, and pot these in loam, leaf-soil, and sand, using small well-drained pots. This Begonia enjoys a high temperature and a moist atmosphere, and should be grown near to the glass, in order to prevent the flower-stems from becoming drawn. When the plants are well rooted they should be afforded a shift into 5-inch pots, which will be sufficiently large enough for all but very strong plants to flower in.

Heliotrope.—Bushy plants growing in small pots may be shifted into 5-inch pots, and stood on ashes in the open air, or plunged outside in the same material until September. These, if placed in a light, warm structure during the autumn, will be most welcome for house decoration at that period.

Alocasias.—These and the ornamental-foliaged Anthuriums should be examined from time to time for red-spider or the "Begonia-mite." If either of these pests be allowed to establish itself on the foliage, much disfigurement will result. If a rusty appearance shows itself on the undersides of the leaves, or along the mid and lateral ribs, the foliage should be well sponged with an insecticide. Only the injury caused by the mite, and not the insect itself, can be seen with the naked eye.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Pines.—At this season of the year it is often necessary to re-arrange the plants and separate the fruiting sets from the non-fruiting ones, also to give the plants suitable autumn and winter quarters according to their different stages. Next year's fruiting sets should now be supplied with fresh plunging material, such as spent tan or decayed leaves; at the same time thoroughly cleanse the interior of the house. The strongest of the plants will now be fruiting. Go over these and carefully remove any suckers and a few of the bottom leaves. A little of the surface soil may at the same time be removed and replaced with a rough sandy loam, to which a sprinkling of guano is added. This top-dressing should be made firm. Suckers from the summer-fruiting plants will soon be ready for repotting, and these may be divided into two batches, using 8 or 10-inch pots respectively. Later suckers may be wintered in 6-inch pots. Give gradually less water to "Queens" intended for starting early next season; at the same time admitting a good allowance of air, and keeping the plants well up to the glass. Plants swelling off their fruit should be allowed a moderate atmospheric moisture, admitting air at the top of the house early each morning to allow of the escape of moisture before the sun becomes too powerful. Do not let these plants whose fruit is now ripening suffer from want of water; on the other hand, do not keep them too wet. Allow a free circulation of air, and damp the paths occasionally when very hot. Should it be desirable to retard any of the fruit, move the plants to a cool, shady house, and give abundance of air.

Figs.—Trees that have supplied a second crop of fruit should finish bearing for the season, and be allowed to rest. See that the shoots have not become overcrowded, and remove all weak and unfruitful wood. Ventilate to the full extent day and night. Trees in a fruitful condition will show a third crop; these should be removed. Watering must be attended to, in order to prevent the foliage becoming limp; with the exception of this, much further attention to them will not be required. When the wood is well ripened, Figs will endure a fair amount of dryness at their roots, but this is not the case when the fruits are swelling. The wood and foliage being now fairly well ripened, a good opportunity is presented for clearing the trees of red-spider and scale. Should these pests have made progress while the fruit was ripening, syringe the trees at intervals of a few days with one of the many advertised insecticides. Afterwards, by a free use of the syringe, thoroughly cleanse the wood and foliage. Trees carrying fruits that are swelling should be given manure-water at the roots. Syringe the trees daily, and give air early in the morning. Expose the fruit well to the sun.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Propagating.—In places where a change of plants is required for the flower-beds every season, sufficient stock should have been planted out for propagating purposes in a spare piece of ground. Such plants as Pelargoniums, Calceolarias, Lantanas, and Heliotropes that will be required next season should have their cuttings taken now, and if room was left between the rows of the old plants they may be dibbled in close to the stock plants to keep them in their varieties, and to make good plants by the autumn. Keep all blooms pinched off the stock plants, and apply the hoe well among the plants.

Lavender.—The flowers may now be gathered. When cutting leave all the stem to the flower-spikes and tie them up in bunches to hang in a cool place. Cuttings of this plant may now be taken; they strike readily if placed in a cool frame well shaded from the sun.

Roses.—The second supply of flowers are fast coming on, and waterings of liquid-manure will be beneficial to them. Some of the varieties such as Mrs. J. Laing and Mrs. Grant will require disbudding. The latter variety makes very little growth here, and too much bloom. The promise of a good autumn display is very evident. Secure shoots of Crimson Rambler for protection against the wind, and cut the old trusses off as soon as they have faded. Remove some of the old shoots, taking care not to overdo it. As soon as the flowers are off, syringe well with some insecticide.

Sunflowers.—Tall varieties planted in exposed positions should be staked; for which purpose small, rough, straight Larch poles are very suitable, as they do not readily blow about with the wind. These plants will require plenty of water and mulchings.

Violets.—Keep the ground about these well hoed, the side shoots cut off, and the plants watered, syringed, and mulched.

Flower Seeds.—The gathering of these should be done as soon as they become ripe. This especially applies to Iceland Poppies and other small-seeded flowers. Seed-gathering should be done when the seed-vessels are dry.

Montbretia Potii.—These are now furnishing a good supply of bloom, and will require plenty of water, especially if the weather continues hot and dry.

Bulbs.—When time permits soil should be got ready for the planting of these. Where the soil is clayey it should have incorporated with it any material that will lighten it, such as old soil from the potting-shed, the soil, rotten leaves and manure from the spent hotbeds, road scrapings, or anything of that nature. Mix in a small quantity of bone-meal, lime, and soot, and turn the whole over a few times in order to thoroughly mix it. Look over any bulbs that are stored; any showing signs of growing out should be at once planted.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUG. 13	Sheffield Horticultural and Rose Show.
TUESDAY, AUG. 16	Exmouth Horticultural Society's Show (2 days).
WEDNESDAY, AUG. 17	Shropshire Horticultural Society's Show at Shrewsbury (2 days).
THURSDAY, AUG. 18	Aberdeen Horticultural Society's Exhibition (3 days). Cottingham and District Flower and Poultry Show.
FRIDAY, AUG. 19	Devon and Exeter Horticultural Society's Show at Exeter.
SATURDAY, AUG. 20	German Gardeners' Club meet.

SALES FOR THE WEEK.

MONDAY, AUGUST 15—Great Trade Sale of Dutch Bulbs, over 5,000 lots, by Protheroe & Morris, at 67 and 68, Cheapside, at 10 o'clock.—Consignment of L. Harrisii, Palm Seeds, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 2.

THURSDAY, AUGUST 18—Great Trade Sale of Dutch Bulbs, over 3,500 lots, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—62° F.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 10 (6 P.M.): Max. 70°; Min. 58°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 11 (10 A.M.): Bar., 29.9; Temp., 64°. Overcast.

PROVINCES.—Wednesday, August 10 (6 P.M.): Max. 74°, S.E. Coast of England; Min. 55°, West Coast of Ireland.

The Revival of the Verbena.

THE Verbenas which occasionally come under the notice of the Floral Committee of the Royal Horticultural Society for awards, take some of us back fifty years or more, the quality of bloom of Miss Willmott, Warley Scarlet, Princess of Wales, &c., reminding us of the leading varieties in cultivation at that time, such as Mrs. Woodroffe, Boule de Feu, Brilliant de Vaise, Robinson's Defiance, King of Scarlets, Purple King, and others. EDMONDS, of Great Ormesby; GEO. SMITH, of Islington; KENDALL, of Stoke Newington; CHAUVIERE, of Paris, and others were then the leading raisers. There was at that time a large demand for Verbenas for bedding purposes and, to some extent, for exhibition, the plants being shown in pots rather than as cut blooms. What might then have been truthfully termed a startling advance was made when, in 1855, Mr. C. TURNER sent out from the Royal Nursery, Slough, three varieties raised by Mr. EDMONDS,

who was gardener to the Dowager Lady LACON, at Great Yarmouth, viz., Bluebeard, Lady Lacon, and Wonderful. These three were figured by ANDREWS in the *Florist* for April, 1855, and after making due allowance for the proneness of the artist to portray ideal rather than actual flowers, yet our recollection of the varieties showing such a distinct advance in form and colour were of a character to impart an enormous impetus to the interest then being taken in the Verbena. Mr. EDMONDS preferred the white eye in his productions, so they became known as Auricula-flowered Verbenas.

If the Verbena is again becoming popular, and the work of improving it is to be seriously prosecuted, then it would be well if raisers could obtain possession of EDMONDS' three varieties of 1855 for employment as seed-parents.

It was the sight of these varieties which fired the late Mr. CHAS. J. PERRY, of Birmingham, with a desire to try his hand at improving the Verbena to a yet greater degree of excellence than had hitherto been attained—a work in which he succeeded beyond all expectation. He produced large and finely-rounded "pips," borne on bold, symmetrical trusses; and he set the fashion of exhibiting cut Verbenas in bold and striking bunches—a practice which was soon generally followed. But as he grew all his Verbenas under glass, this method of culture somewhat injuriously affected the constitution of the plants. Many of his best varieties were found to be practically useless for bedding out, though Mr. PERRY always contended that he raised solely for exhibition purposes, and simply as cut flowers. There must be some living who can remember the stands of twenty-four bunches he was in the habit of staging at the Royal Horticultural Society's shows at South Kensington, at the Royal Botanic Society's exhibitions, and at those held at the Crystal Palace.

When illness compelled Mr. PERRY to give up raising Verbenas, the work was continued by Mr. HENRY ECKFORD, then gardener to the Earl of RADNOR, Coleshill, Berks. For years previously ECKFORD had been at work raising Dahlias, zonal Pelargoniums, and other florists' flowers, as well as selecting and raising fine strains of vegetables—pioneer work of a valuable character—before he began his successful labours with the Sweet Pea. He raised many seedling Verbenas; but, recognising that its greatest value consisted in its adaptability for bedding purposes, he grew all his seedlings in the open-air, and brought back to the Verbena rare constitutional vigour. Many varieties of his raising were named and distributed, until the time came when, through leaving Coleshill, the culture of the Verbena had to be abandoned by him. His collection passed into the hands of Messrs. KEYNES & Co., of Salisbury, who at one time grew named Verbenas largely for the trade. If they have still in their possession a brilliant scarlet-crimson variety bearing the name of Lustrous, it would be found invaluable as a seed-parent at the present time.

Those who may undertake the work of improving the Verbena should seek to produce rounded, flat "pips," well displayed on bold trusses. Profusion of bloom is a natural characteristic of the Verbena, but a compact habit can be secured only by care-

ful selection. Some improvement in the form of the pip is highly necessary.

The late JOHN WILLS also interested himself largely in the improvement of the Verbena, and even introduced double varieties, which we have never seen since. Probably they fell victims to a mysterious disease which discouraged growers, and led them to abandon the cultivation of the Verbena for a period.

TROCHETIA BLACKBURNIANA (see Supplementary Illustration).—We are indebted to Mr. BEDFORD, of Straffan House Gardens, Kildare, for the specimen from which our illustration was taken. It is a Sterculiad, native of Mauritius, an island in the Indian Ocean, another occurring, according to the *Botanical Magazine*, in St. Helena, in the Atlantic, with the whole continent of Africa, on which no species of the genus has yet been found, in between the two islands. It may be easily judged that there is plenty of room for speculation as to the why and wherefore of this distribution. In cultivation it is a stove shrub, with the leaves more or less covered with soft, brown, stellate hairs. The flowers are on long stalks, with oblique petals, with a white ground, bright red along the veins, and with revolute margins also red. Mr. WORTHINGTON SMITH's drawing shows the leaves and flowers of their natural size, a section through the flower exhibiting the arrangement of the parts and the ovoid, mucicate pollen-grains, the latter seen as magnified 200 diameters. A coloured figure was given in the *Botanical Magazine*, t. 7209.

NATURE-STUDY COURSE.—In an address to the students attending the Nature-study course at the Swanley Horticultural College, Mr. J. C. MEDD referred to the scheme put forward by the League of the Empire for affiliating schools in Great Britain to those of the same grade in the Colonies with a view to the pupils of the affiliating schools corresponding with one another on matters affecting their school life and surroundings. The proposal has met with the most cordial support from the Ministers of Education in the different Colonies, and already several schools have become thus linked together. He could conceive of nothing better calculated to interest children in their work, widen their outlook, break down the parochialism that had been so harmful in the past, and to inspire those with whom the future of the Empire would rest with a sense of its solidarity and grandeur. Mr. MEDD also spoke of the openings for remunerative employment which women thoroughly qualified in Nature-study subjects might probably find. The desire to make the instruction in rural, day, and continuation schools more appropriate for rural children was universal, but competent teachers were scarce. The difficulty could be most easily solved by grouping schools and engaging peripatetic teachers for special classes; and he strongly urged the students present to have the matter brought to the notice of their respective local authorities.

OUR WILD PLANTS.—The Rev. G. ADRIAN WOODCOCK has published the substance of a lecture he gave on "How to make Notes for a Rock-soil Flora" (Louth: J. W. GOULDING & SON; price 1s.). This is a very valuable and suggestive pamphlet, giving indications as to the relationships between particular plants, the soils they grow on, and the conditions to which they adapt themselves. Those who imagine that botany consists merely in finding out the names of plants will have their mental horizon considerably extended by the perusal of this lecture. It is so full of details and of rational inferences from them that it should be perused not only by field botanists, but by all who are interested in the tillage or management of land.

SEX-VARIATIONS OF AUCUBA JAPONICA.—

Since the introduction of the male plants of *Aucuba japonica* to Europe in 1863, many curious sex-variations have been noticed. M. LOMBARD-DUMAS has been observing some of these, and has obtained some interesting results, which are published in a recent number of the *Bulletin de la Société Botanique de France*. M. DUMAS found that certain of his old male plants were suddenly metamorphosed into young female plants, but remained sterile in spite of his attempts at artificial fecundation. Of two cuttings taken from the same male shrub, one produced small corymbs of female flowers, though preserving their male appearance; the other formed fine trusses of male flowers. Male trusses of this latter plant varied the following year, and yielded numerous hermaphrodite flowers, a few more or less normal male blooms, and rarely female flowers with no ovary, although provided with a stigma sometimes normal, sometimes bifid or even trifid, and in the form of a recurved horn.

READING FLOWER SHOW.—The Secretary informs us that this event will take place on the 24th inst., and not on the 30th, as recorded in our list of appointments for August.

CARNATIONS.—MR. MARTIN SMITH writes that his new seedlings show a great advance in yellow-ground Picotees, fancies, flakes, and bizarres. He expects to astonish the "fancy" next year.

"DIFFUSION AND OSMOTIC PRESSURE."—

The circulation, so-called, of the sap depends upon certain physical and chemical factors, which are considered in a work bearing the above title. The author is DR. BURTEN EDWARD LIVINGSTON, of the Department of Botany of the University of Chicago. In his thesis he gives a general view of the whole subject, which will be of value to the student. The following citation will show that the problems connected with the ascent of the sap are not yet solved:—"Just how the sap is raised in trees is not surely known. There are at present two main theories to account for it: (1) it is supposed to be raised by periodic pumping action of living cells in the trunk; (2) it is supposed that evaporation and the resulting osmotic concentration in the leaves will draw it up from the roots, the cohesion of the minute water-columns being supposed to be of sufficient magnitude to prevent their being broken by the strain." The volume in question is issued from the University Press of Chicago.

HOW TO GET RID OF PLANTAINS ON LAWNS.

—A correspondent of *American Gardening* makes use of kerosene for this purpose. With a small squirt oil-can he deposits two or three drops of the oil on each Dandelion or Plantain, with the result that the intruders disappear.

FLORA OF THE PAMIR.—A few years ago we used to hear a good deal about the "Pamir," a desolate mountain region between 41° and 46° E. longitude and 37° to 40° N. lat., concerning the exact limitations of which there was some difference of opinion between ourselves and the Russians. One consequence of this dispute was the acquisition of an increased knowledge of the territory and its products. Now we have before us a *Flora of the Pamir* by Madame OLGA FEDTSCHENKO. Fortunately the names of the plants are given in Latin, so that we have a complete list of the plants in that tongue, together with bibliographical references, while the extended comments are in Russian. Four hundred and eighty-five species, including one Fern (*Cystopteris fragilis*), are enumerated. The plants are mostly herbaceous perennials, bulbous plants, including several species of *Allium*, with very few trees (species of *Salix* and *Betula*). Statistical tables and a map of the country (unfortunately in Russian) are included. The

illustrations show a dreary waste of rock with snow-mountains in the distance; but the existence of cattle is a proof that herbage is not altogether wanting.

CLOVER-SICKNESS.—It is well known that Red Clover grown for years in succession on the same land is very apt to fail. Various causes have been assigned for this failure. Mr. HANS GÜSSOW, in a paper in the *Journal of the Royal Agricultural Society*, discusses these alleged causes and comes to the conclusion that the real cause of the disease is the fungus known as *Sclerotinia ciborioides*, the black seed-like "sclerotia" of which may often be seen in the stems of the Clover, and may also be found in the soil in which the plants are growing. No satisfactory remedy has yet been devised. The burning of the plants and of the top layer of soil is a "counsel of perfection."

THE BRITISH SCIENCE GUILD.—It has been a frequent subject of comment that, although the contribution of this country to the progress of science has been second to that of no other nation, the English people do not manifest that interest in and belief in the powers of science which are noticeable among the peoples of the Continent or of America. In spite of the efforts of many years the scientific spirit, essential to all true progress, is still too rare, and, indeed, is often sadly lacking in some of those who are responsible for the proper conduct of many of the nation's activities. It is with the view of attempting to remedy this evil, and to bring home to all classes the necessity of applying scientific treatment to affairs of all kinds, that the proposal is made to bring together those convinced of this necessity by founding "The British Science Guild." The objects and organisation of the Guild, as we learn from a circular before us, will be entirely disconnected from party politics, and are as follows:—

OBJECTS.

- (1) To bring together as members of the Guild all those throughout the Empire interested in science and scientific method, in order, by joint action, to convince the people, by means of publications and meetings, of the necessity of applying the methods of science to all branches of human endeavour, and thus to further the progress and increase the welfare of the Empire.
- (2) To bring before the Government the scientific aspects of all matters affecting the national welfare.
- (3) To promote and extend the application of scientific principles to industrial and general purposes.
- (4) To promote scientific education by encouraging the support of universities and other institutions where the bounds of science are extended, or where new applications of science are devised.

METHODS OF ATTAINING THESE OBJECTS.

- (a) By Publications. (c) By Conferences and Lectures.
- (b) By Meetings. (d) By Deputations.

The Organizing Committee has elected Sir Norman Lockyer, President; Lord Avebury, Honorary Treasurer; Lady Lockyer, Honorary Assistant Treasurer, and Mr. C. Cuthbertson, Honorary Secretary.

It was resolved that Life Members of the Guild shall pay, on admission, 2 guineas, which includes a registration fee of 2s. 6d., and that Annual Subscribers shall pay, on admission, 5s., and in each subsequent year 2s. 6d. It was also resolved that donations may be accepted.

THE USES AND WONDERS OF PLANT-HAIRS.

by KATE E. STYAN. (London: BEMROSE & SONS, Ltd., 4, Snow Hill).—Miss STYAN does not pretend to offer the results of her own investigations, but makes use of those of various authorities, arranging them for the understanding of even the unlearned. In the subject of plant-hairs she treats of an important department of vegetable physiology, and readers may be grateful to her for interesting and enlightening them unexpectedly. The authoress divides plant-hairs into those that are (1) Protective, (2) Defensive, and (3) Assistive. "Hair" is of course a vague term,

and comprehends the finest down at one end of the scale, and thorns and spines at the other. The little book is appreciatively written, and made extra clear by illustrations showing magnified hairs and their structure. We recommend the publication to young naturalists who have not yet grappled with more important text-books.

SANSEVIERA LAURENTII.—A species discovered by the late Prof. LAURENT at Stanleyville, Congo, and introduced to the Botanic Garden, Brussels. The tufted leaves are oblong lanceolate, green with broad marginal greenish-yellow bands, and narrower stripes of the same colour in the centre of the leaf. It is described and figured in the last number of the *Revue de l'Horticulture Belge*.

TRIALS AT WISLEY.—We have received from the Secretary of the Royal Horticultural Society a list of the flowers, fruit, and vegetables of which trials are suggested during 1904–5 in the Society's Gardens at Wisley:—

Floral.—Violas: six plants of each variety to be sent in February, 1905. Carnations: three plants of each variety, to be sent in February, 1905. Cactus Dahlias: two plants of each variety to be sent in May, 1905.

Fruit and Vegetables.—Plums and Apples bush trees to be sent by end of October, 1904. Peas: half-pint of seed of each variety to be sent by February, 1905. Potatoes: twenty tubers of each variety, to be sent by February, 1905. Broccoli: half-ounce of seed of each variety, to be sent by February, 1905. Tomato: twenty seeds of each variety to be sent by August 30, 1904, for winter trial.

All the above should be addressed to the Superintendent, Royal Horticultural Society's Gardens, Wisley, Ripley, Surrey. If by rail, per London and South Western Railway to Horsley Station.

EUCALYPTUS.—The fourth part of Mr. MAIDEN's critical revision of the genus *Eucalyptus* (Sydney: W. A. GULLICK) contains numerous illustrations and details concerning *E. incrassata* and *E. fecunda*. Numerous varieties are established, some of which have been held to be distinct species.

VILMORIN MEMORIAL.—The subscriptions up to the present time amount to 10,135 francs (over £400). This amount has been contributed by 872 subscribers, a large proportion of whom have contributed small sums of 1 franc and several of 50 centimes, a gratifying test of the esteem in which the late HENRY DE VILMORIN was held by all classes. We shall be happy to transmit to the Treasurer, M. BOURGUIGNON, any sums that may be entrusted to us for the purpose.

VISITORS TO THE ROYAL GARDENS, KEW.

—The number of visitors from July 31 to August 2 was 112,022.

PUBLICATIONS RECEIVED.—*Biennial Bulletin of the Women's Agricultural and Horticultural International Union*, No. 15, July 15. A pamphlet containing a paper on Forestry by Mr. C. S. OWEN, and a record of women's work.—*County of Monmouth: Report of the Organising Secretary to the Technical Instruction Committee, Agriculture, Horticulture, and Arboriculture*. "The horticultural instruction given at the Farm School, Little Mill, is being continued, and the lectures given at Usk in May were concluded, and will commence again in September."—*Agricultural Bulletin of the Straits and Federated Malay States*, May. Contents: Tapping Scars in Old Wood, Rubber Planting in Southern India, Cotton Notes, Rame, Parasitic Fungi on *Hevea brasiliensis*, &c.—*Report on the Botanical and Afforestation Department, Hong Kong*, for 1903. Records progress made in planting and keeping up the Eotanic Gardens, and the increasing number of visitors to them.—*The Botanical Magazine*, Tokyo, April 20. Includes articles in German and Japanese.—*Journal de la Société d'Horticulture du Japon*, May 31. This includes articles in Japanese, and a description, in French, of *Cypripedium macranthum*, with illustration.—From the Michigan State

Agricultural College Experiment Station. Division of Horticulture: Bulletins Nos. 213 and 214, *Small Fruits for 1904* and *Tomatoes and Potatoes*, by L. R. Taft and M. L. Dean.—Bulletin of the Agricultural Experiment Station of the Louisiana State University: *Rice*, W. C. Stubbs, W. Dodson, and C. Brown.—From the United States Department of Agriculture: *Catalogue of Exhibits of Insect Enemies of Forests and Forest Products at the Louisiana Purchase Exposition, St. Louis, 1904*.—Farmers' Bulletin, No. 198: *Strawberries*, by L. Corbett.—Bureau of Plant Industry, Bulletin No. 60: *A Soft Rot of the Calla Lily* (?), C. Townsend; and No. 65: *Reclamation of Cape Cod Sand Dunes*, by J. Westgate.

DENDROBIUM BELLATULUM.

THIS pretty little species was discovered some years ago by Dr. Augustine Henry in Yunnan, growing at an elevation of 5,000 feet. Later, Messrs. James Veitch & Sons imported a small number of plants of it through their collector, Mr. Wilson. Last year Mr. W. Micholitz, collecting for Messrs. Sander & Sons, St. Albans, found it growing on Oak-trees at Lang Bian, in Annam, at a high elevation, and flowering in November and December. A consignment was sent to Messrs. Sander, who recently exhibited plants of it, from one of which our illustration (fig. 47) was prepared. It is a cool-house plant of the nigro-hirsute section of *Dendrobium*, its ivory-white flowers with orange-red markings on the lip being nearest to *D. cruentum* in general appearance.

FRUIT GROWING.

MR. CRUMP, in the *Madresfield Agricultural Club's Quarterly*, makes the following remarks on the planting and care of fruit-trees, remarks which, however discouraging, deserve attentive consideration:—

"We have the important fact before us that during the past twenty years, upwards of 20,000 of the very best fruit-trees have been gratuitously distributed amongst the tenantry on the Madresfield Court estate. And, reasoning from analogy, there is a right to expect some kind of show for such a heavy item and so great generosity, or, in other words, some sort of profitable results to the tenants, to say nothing whatever of what we should also now be able to see, viz., that valuable asset, the permanently increased value of the property, if one could but find these 20,000 plantations of healthy, well-cared-for trees. It is to be feared that if a census were taken not more than a tithe of the aforesaid 20,000 would be found to exist at the present time. It is to be hoped that the recipients will be able to contradict me and prove to the contrary.

"In passing, it may be mentioned that at the Worcester Summer Assizes four years ago, a well-known valuer of fruit-trees, in his evidence, assessed the value of some fruit-trees about ten years planted at an average of £6 per tree, and some trees only a few years older were considered to be of £10 value each. If we accept these figures, or even take an average of £5 per tree for the trees (say 10,000), which should be at least ten years of age, we have a total value of £50,000 to which these trees might fairly be expected now to have attained, to say nothing of the value of those more recently planted; but if we compare these figures with actual facts we must admit the comparison is more than odious. And the only legitimate conclusion we can draw is that the present system of fruit-cultivation is a failure, although everything has hitherto been done with the very best of intentions by those most concerned. As a matter of fact the average British farmer never does take kindly to fruit-growing, and it is to be feared he is too conservative in his ideas and too wedded to that old doggerel phrase, 'It was my father's custom and so it shall be mine,' ever to learn rightly the very

important lessons to be derived from the school of experience, which, coupled with intelligent and enthusiastic application, are necessary to commercial fruit-growing. It is extraordinary that with all the facilities offered, no one has had the enterprise even to attempt any thorough system of fruit-tree planting on the same lines as entered upon for any other farm crop, that is, by giving up a certain area of land entirely for that purpose. The plan, or rather want of a plan, usually adopted, is a kind of compromise, consisting of the filling up of vacant spaces in grass or cornfields, where trees of a similar kind have died from old age, having naturally exhausted the soil for a considerable distance round about. The planting is invariably done during frosty or very wet weather, when the soil is waterlogged; a small, deep hole is made, and the roots are thrust in perpendicularly, instead of being carefully spread out horizontally near the surface. No stake, fence, or mulch is given for weeks, if at all, and the trees are left to the tender mercy of rabbits, stock, &c. No pruning or other attention is given, rank weeds and coarse

LOCKINCH CASTLE, WIGTOWN-SHIRE.

A VISIT to the Wigtownshire seat of the Earl of Stair is of much interest. The extensive and well-kept grounds were aglow in spring with the flowers of Rhododendrons and deciduous Azaleas, which are mostly planted on slopes and banks. With the Rhododendrons and Azaleas are growing *Kalmia latifolia* and *K. angustifolia*, whilst quantities of large bushes of *Andromeda axillaris* with tiny white flowers were seen, and several specimens of *Magnolia conspicua* in flower; *Choisya ternata* was represented by numerous large bushes covered with starry white flowers; *Piptanthus nepalensis* on walls and in the open was also in flower. *Olearia macrodonta*, which flourishes here, would soon be in flower. There are many large shrubs of 15 or more feet in height of *Cotoneaster frigida*.

Amongst other shrubs noticed in the grounds were *Acer Negundo variegatum*, *A. palmatum atropurpureum*, *Acacia dealbata*, *Ailanthus glandulosa*, *Aralia spinosa*, *Arbutus Unedo*, *A. Andrachne*, *A.*

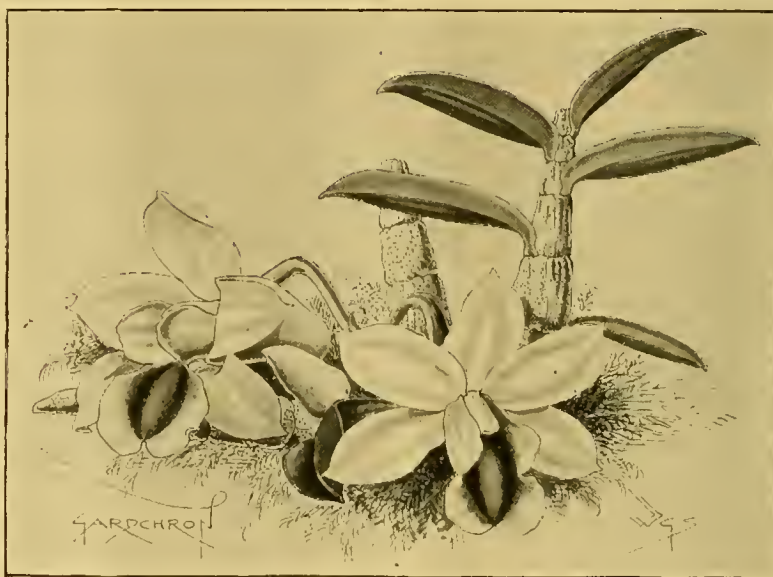


FIG. 47.—DENDROBIUM BELLATULUM: FLOWERS CREAMY-WHITE, LIP ORANGE-RED.

grasses are allowed to flourish, sucking out the moisture required by the tree's roots, leaving the young previously well-cared-for tree to a terrible struggle for bare existence, which invariably ends in a hide-bound, poverty-stricken state of chronic debility. Thus is the matter of fruit-growing brought into disrepute, and only false results are obtained.

Isolated cases are known where the trees were purposely planted very deeply in order to save the trouble of staking—a fatal mistake for the poor unoffending trees. We have also known trees supplied to order one season and simply laid in by the heels when received and not planted until the next season. Such a state of things is unpardonable, and shows the necessity for plain speaking. *William Crump, V.M.H., Madresfield.*

MISSOURI BOTANICAL GARDEN.—The fifteenth annual report gives full details of the progress of the garden and school of horticulture. The intentions of Mr. SHAW, the founder, have been carefully carried out, and the report gives evidence of steady progress in all departments.

procera, *Paulownia imperialis*, *Veronica imperialis*, *V. salicifolia*, *Viburnum tomentosum* var. *plicatum*, *Ligustrum sinense*, *Caryopteris*, *Mastacanthus*, *Osmanthus ilicifolius*, *Desfontainea spinosa*, *Coronilla glauca*, *Rhus Cotinus*, *R. typhina*, and *R. glabra laciniata*. There are also many fine clumps of Bamboos, *Gunnera manicata*, *Arundo donax*, and some good healthy specimens of *Cordylina australis*, *Yucca gloriosa*, *Eryngium pandanifolium*, *Eremurus himalaicus*, and *Fatsia japonica*.

On a south wall below the flower-garden near the castle amongst many other plants were *Clanthus puniceus* with bright flowers, and *Metrosideros floribunda*. On this wall also were noted healthy plants of *Eriobotrya japonica*, *Eugenia Ugni*, *Aloysia citriodora*, *Berberidopsis corallina*, *Ceanothus "Gloire de Versailles"*, and large, healthy plants of *Romneya Coulteri*; *Clematis montana* in flower, *Solanum jasminoides*, the large-leaved *Myrtle*, *Schizophragma hydrangeoides*, *Benthamia fragifera*, *Habrothamnus elegans* showing flowers, *Jasminum revolutum*, and *Smilax aspera*. The Golden Hop is trained up poles, as is also *Polygonum Balduianicum*. On the castle walls *Euonymus radicans variegatus* has reached a height of 20 feet, and has leaves

of twice the ordinary size, and with gold-coloured variegation. There are large circular beds of *Hydrangea Hortensia*, *H. paniculata grandiflora*, *Lilium auratum*, *Hyacinthus candicans*, and *Kniphofias*.

A circular piece of water contains a collection of the best varieties of the Marliac hybrid *Nymphaeas*, and in this lake or lock many fine clumps of *Richardia æthiopica* are naturalised, and were throwing up many spathes. *F. Street*.

HERBACEOUS BORDER.

GLAUCIUM FLAVUM TRICOLOR.

THE tricolor form of the well-known "Horned Poppy" is certainly one of the most striking of hardy border plants. The plant is of biennial duration, of sufficient hardiness to endure the winter in the open in not a few places in the British Isles. The leaves are deeply cut and spinous, while the silvery character that is characteristic of its growth renders it at once distinct and picturesque. This easily-grown plant would be most effective on the larger rockery, provided ample space could be given to it; and whether grown here or in the border, a well-drained soil and sunny position must be allotted to it. Unlike most variations of a species, the above-named is not of garden origin, and appears to have been first introduced from Asia Minor. A very fine exhibit of this showy plant was in the hardy plant group of Messrs. Wallace & Co., Colchester, at the recent Holland House Show. The handsome blossoms are of reddish-orange colour, with an approach to chestnut-red, and are rendered the more conspicuous by a large ovate blotch at the base of each segment. The long seed-pod which succeeds the flowering stage is also a notable characteristic of the genus.

G. flavum (type), also called *G. luteum*, is a desirable plant. The large flowers are yellow in colour.

G. Fischeri has woolly foliage and blossoms of a reddish-flame colour; it is well worthy of growers' attention. This plant and *G. flavum*, with its varieties, may be regarded and treated as biennials, sowing the seeds from May to July. Where only a few plants are required, the seeds may be sown with advantage in pots, either singly or early thinned out to single plants, transferring to their flowering positions as soon as large enough.

G. corniculatum (phœniceum), though probably more strictly an annual, will in some instances submit to the same treatment as the first-named species.

ASTILBE DAVIDII.

The more one sees of this fine plant the more one recognises its value in the hardy plant garden. The colour of its flowers, if not an absolute novelty among hardy plants, is rare and very effective, and we only recall the *Lythrum*s and *Liatris* that approach the colour of the above-named *Astilbe*. The plant possesses its own characteristics in a low, widely-spreading tuft of much-divided leafage, and issuing therefrom in almost close columnar outline are the many inflorescences of reddish flowers. The examples—indeed, they were specimens—exhibited by the Messrs. Veitch in the Royal Horticultural Hall, Vincent Square, June 26, had flowering stems 7 feet high, and on some plants fully a score of flowering stems were seen. Judging by the widely-extending leaves, the plant is peculiarly well suited either for free, open grouping or for isolation, and in either case will create a new feature in the garden.

The plant shown for the first time at the same meeting as *Astilbe alba* reminds one greatly of the original exhibit of *Spiræa astilboides* of a score or more years ago. The plant now referred to is certainly of a bolder type—a giant form it may be—yet possessing the same broad characteristics generally. *E. Jenkins*.

"LA VILLA ED IL GIARDINO."—Under this title has been published the first number of an Italian publication to be issued monthly. It is published at 31, Piazza Rusticucci, at Rome, and is devoted to the interests of horticulture. An excellent illustration of the *Nelumbium* growing in the lake at the Villa Pamphili is given, and there are articles on the culture of *Vandas* and other plants.



FIG. 48.—GLAUCIUM FLAVUM VAR. TRICOLOR.

Flowers orange-red with a black spot, edged with gold colour at the base of each petal. The flower-bud to the left shows the curious cap-like calyx becoming detached.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

GREY TOWERS.—In reference to an article in your issue of July 23, I should like to say that all the alpine and wild-garden was not laid out by myself. The mansion was built originally by W. R. J. Hopkins, Esq., in 1865. The garden proper was laid out under his supervision by Mr. Green, a landscape-gardener of some repute at that time. The property came into Mr. Dorman's hands some ten years ago. The garden was then remodelled by Mr. Milner. Afterwards we added the alpine and more natural portion, which your correspondent so ably describes. This work was carried out by Mr. Richard Potter. I therefore hasten to give that gentleman the credit which has been given by mistake to myself. *A. Findlay.*

THE SEEDING OF BAMBOOS.—At the present time there are three varieties of Bamboos seeding at Menabilly—namely, *Arundinaria Simoni*, *Phyllostachys Henonis*, and *P. Castillonis*. Several clumps of *A. Simoni* are seeding, in some of them only one or two culms are producing seed, while the rest of the clump, often the greatest portion of it, is not showing fruit at all. Doubtless the fertile culms will wither and die; but will the other non-seeding culms of the same clump die also? What has been the experience in this respect of other growers of Bamboos? As regards one whole clump of *P. Henonis* which seeded last year, this clump, though weakened and sickly, has not died, but some of it is looking fairly well, though not so healthy as before. As to *P. Castillonis*, only one small clump of the several larger clumps growing at Menabilly is showing seed; and I shall be sorry if fertility causes death to this species, as I much admire the plant with its pretty and distinct colouring of the culms and fine foliage. I have not heard of this variety seeding in other places, but shall be glad to know the experience of other growers. I hear that a specimen of *Bambusa Falconeri* or *nobilis* in this neighbourhood, and which I believe is one of my offshoots, is flowering; but all my fine specimens of this variety, which are now nearly thirty years old, seedlings of my original grand specimen, are yet flourishing, and sending up fresh culms 25 to 26 feet high. Their death and disappearance would cause sad gaps in my gardens. *J. Rashleigh, Menabilly, August 5, 1904.*

—We have had clumps of these plants flowering this summer, viz., *Phyllostachys Boryana*, *P. Castillonis*, and *Arundinaria Simoni*, and in the two first-named no new growths are being pushed up from the base. The reason of their flowering cannot be that the two past summers of 1902 and 1903 were particularly tropical. I noticed our plants back in the winter were going to bloom by the shoots being much heavier, causing the growths to droop over much more than is usually the case, and now they are in full flower, many of them at the points touch the ground after a shower of rain. Some varieties appear to flourish for years and show no flower. We have immense pieces of *Arundinaria japonica*, *A. quadrangularis*, *Phyllostachys aurea*, *P. nigra*, *P. Quiloi*, *P. viridi-glaucescens*, neither of which have as yet showed any signs of flowering. *J. Mayne, Bicton, Devon.*

DISA GRANDIFLORA.—A remarkable display of this lovely terrestrial Orchid was exhibited by Mr. J. Sargent, gardener to Henry Hansard, Esq., "Millfield," Cobham, at the Oxshott flower-show held in the Manor House grounds, Stoke d'Abernon, on July 20. The plants, arranged in a group, were not for competition, and were marvels of good culture. They were grown exclusively in shallow pans, and averaged ten spikes to a pan, each spike containing five or six bold flowers. It is very seldom that one has the opportunity of seeing this difficult plant grown in such good form. *W. H. Bailey, Oxshott.*

GRADUS PEA.—I have always held a high opinion of this variety, and was pleased to note the remarks of Mr. J. G. Wilson on p. 77 in your issue for July 30, but I was not aware until this season that it was a first early variety, and suitable for sowing towards the end of January. Even in this genial climate we could not gather

under seventeen weeks from the time of sowing, ours being sown on January 23. Do I gather from your correspondent's remarks that when he says it took fourteen weeks to get into full pod that he means the Peas were ready for the kitchen by that date? If so, it would be interesting to know the date upon which he sowed, and whether outside or whether in pots and eventually planting out as the season advanced. *Devonian.*

THE CYANANTHUS.—Few among our rock garden plants are more beautiful than those belonging to the small genus *Cyananthus*, of which there are some eight species recognised in the *Index Kewensis*. Of these only some two or three (probably only two) appear to be in cultivation in these Islands, but these are deserving the attention of all who can afford them their few requirements. They must be ranked as among the choicest of our plants, and their value to us is enhanced by their flowering period being later than that of many alpine flowers. They are frequently at their best in August, and at that time their lovely blue flowers are always most welcome, seeing that the alpine garden is then duller and less attractive than earlier in the season. With the exception, perhaps, of *C. barbatus* (not, so far as I am aware, in cultivation in the United Kingdom), which is a native of China, these flowers come from the Himalayan regions. Like many plants from these quarters, they have their idiosyncrasies, and it is not always easy to hit upon their precise requirements. Nowhere have I seen the *Cyananthus* do so well as on a low terraced rockery with a full west exposure, and in a district where the rainfall was higher than the normal average for the United Kingdom. I am aware that this is hardly the position recommended by some experienced growers, but I do not think the plants referred to, and in the garden of a very able alpine grower, could easily be surpassed. A dry position, facing south-east, with a compost of leaf-mould and sand, with some loam added, as well as a little grit, is the prescription of another able cultivator. I think, however, that a west exposure and plenty of water in summer would be better; my own experience also being in favour of this. With a good dry soil and subsoil the *Cyananthus* requires and delights in more copious supplies of water in summer than are frequently afforded it; but, on the other hand, it should be kept drier in winter. This can best be secured by throwing off the winter rains by means of a sheet of glass or a slate a little elevated above the plants. In summer watering I find it desirable to keep the water applied by the watering-can off the foliage of the *Cyananthus*. It can be grown either in a crevice of the rockwork and depending from it, or on a flat and almost level terrace. The species of *Cyananthus* most commonly met with is *C. lobatus*. This is a very beautiful little plant with ornamental, prettily-lobed, light green foliage, and handsome purple-blue flowers with a white centre. It is of trailing habit, and when in bloom is one of the most charming rock-plants in existence. It is best propagated by seeds, but the plant should be kept dry overhead if it is desired to save seeds, as the water gathers in the calyx of the flower and rots the seeds, or prevents them from forming. It is a truly delightful plant of the highest order of beauty. *C. incanus* appears to be met with sometimes under the name of *C. inflatus*, a recognised species, which I am not yet satisfied is in cultivation in this country at present. At least the plants I have seen called *C. inflatus* were simply *C. incanus*. It is a very beautiful species with smaller flowers, which are more numerous produced than those of *C. lobatus*. They are of a soft blue; while the oval leaves, which are only slightly lobed, are beautifully covered with soft silky hairs. This is a very desirable species, although it appears to be less hardy than the preceding. Like it, it ought to have some shelter from excessive rainfall in winter. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

CAMPANULA ISOPHYLLA ALBA.—We are so accustomed to see this charming trailing plant grown in a pendent direction that the production of it in the form of quite large pyramids naturally excites surprise. I think it very doubtful whether there are in the kingdom two such fine

pyramids of this plant as are now in the possession of Mr. Durrant, of South Park, Reigate. These plants are growing in 10-inch pots. They measure from the bottom of the pot, which is completely draped with foliage and snow-white flowers, to the apex about 4 feet in height, and low down fully 3 feet through. The method of training is as follows:—A funnel of wire-netting, about 6 inches in diameter and 3 feet in length, is fixed with the aid of stakes in the centre of each plant, and the growths kept within it until the tip is reached, when they are allowed to grow out laterally, thus in time forming these remarkable pyramids. Mr. C. J. Salter, of Woodhatch Gardens, who saw these specimens with me on the 30th ult., was as much surprised and pleased with them as myself, and has resolved to see Mr. Durrant, to induce him to bring this pair of specimens to the Horticultural Hall at the next meeting. I hope he may be successful, as I am sure the plants would secure considerable attention, not only for the fine culture shown, but also for their novel appearance. Mr. Durrant has also some good large examples of this *Campanula* as trailing or vase-plants, and in this way they too are very beautiful. Doubtless this *Campanula* owes something of its popularity to the snowy whiteness of its flowers; but its trailing, free-growing, and flowering habit adds much to that popularity. As a window plant, inside or out, hanging in pots or growing in window-boxes, it cannot be excelled. *A. D.*

STRAWBERRY FOR WET WEATHER.—I find no Strawberry withstands rain better than the old Elton Pine. *D. S. M., Poltalloch, Lochgilphead.*

EFFECT OF INSECT BITES ON CHLOROPHYLL.—We are, of course, well aware that the bites and stings of many insects have very peculiar effects upon the subsequent growth of plants in the shape of galls and other malformations, but, so far as we know, the far-reaching but temporary effects in chlorophyll, as evidenced by change of colour, due to the mere devouring of even small parts of the foliage by weevils and caterpillars, have neither been recorded nor accounted for. In my own experience it very frequently happens that the presence of these vermin in Ferns is clearly indicated to me by the normally healthy green colour turning to a very pale whitish tint, and this not merely in the immediate vicinity of the pests and the wounds caused by them, but even in adjacent fronds of considerable size. Root affection is out of the question, since the weevil in the beetle stage does not touch them, any more than does the caterpillar, and yet the entire chlorophyll of a plant is affected by merely local bites, which in the case of both classes of vermin we do not regard as in any way venomous, but simply locally destructive. Furthermore, if we remove the depredators the normal green tint is resumed in a few hours. Aphides, which pierce the epidermis and withdraw the sap by suction, have no such effect, though in their case it would be more easily understood. We may also excise parts of fronds without any such pallor resulting. The cause of such wide effects is therefore a mystery, while they indicate a sensitiveness to distant influences which, though unaccompanied by motion, rivals that of the Sensitive-plant itself. *C. T. D.*

EMIGRATION TO SOUTH AFRICA.—In a recent issue "One who has been Bitten," in advising young men not to emigrate to South Africa for a less wage than £3 per week, is surely writing of one particular place in South Africa, and if so his note is rather misleading, as it would appear as if it applied to the whole of South Africa. As South Africa comprises nearly 900,000 square miles, it is obvious that in so vast an area the cost of living, &c., varies considerably in different towns. Had "One who has been Bitten" given the name or names of the particular place or places to which he refers he would have done a real service to many intending emigrants. A few months since I engaged an experienced gardener to go to the western province of South Africa at £8 10s. per month. I have since heard that he is satisfied, and his employer is also satisfied. I have had experience in Cape Colony, and I have found that a fair margin of the monthly wage of £9 could be put away for some future

date. As I know several first-class men holding good positions in South Africa, I will endeavour to gather information from those who are living in widely separated towns, and report to you later for the benefit of those to whom it may be of service. *W. Miles, Isleworth.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 9.—The display of plants, &c., at the fortnightly meeting at the Hall in Vincent Square was not a large one; no doubt many of the exhibitors are holding back for the premier provincial show at Shrewsbury on the 17th inst. Still, there were several meritorious exhibits, notably a fine collection of Gladioli from Messrs. KELWAY & SON, who are hard to surpass in this beautiful flower. The attendance was meagre, doubtless owing to counter attractions at the seaside and other holiday resorts. Although the weather was warm and bright sunshine prevailed, one could not but appreciate the conditions obtaining in this handsome building—the absence of stuffy atmosphere, and the entire freedom from crush when examining the various displays. The light, too, is excellent, enabling one to estimate the shades of the various flowers with a nicety not possible in such a building as the Drill Hall. After the walls are properly seasoned, they will receive the colouring which is necessary to tone them down.

The Committees, which must work far more pleasantly in their new environment, recommended several awards to novelties, the Orchid Committee granting a Botanical Certificate to *Bulbophyllum Hamelinii*, and the Floral Committee four Awards of Merit.

The FRUIT COMMITTEE did not find much to occupy their attention, although they had some exhibits on which to pass judgment, including an extensive collection of fruit and vegetables from the University College Gardens, Reading, and miscellaneous small exhibits of fruit from several other exhibitors.

Forty-nine new Fellows were elected to the privileges of the Society at the general meeting in the afternoon.

Floral Committee.

Present: H. B. MAY, Esq. (Chairman); and Messrs. Chas. T. Drury, C. Blik, Jas. Walker, R. C. Notcutt, C. J. Salter, Chas. Jeffries, Geo. Gordon, Amos Perry, Chas. Dixon, Wm. Howe, J. Jennings, Chas. E. Pearson, H. J. Jones, W. P. Thomson, E. H. Jenkins, W. J. James, Chas. E. Shea, W. Cuthbertson.

LORD ALDENHAM (gr., Mr. E. Beckett), Elstree, staged eighteen vases of spikes of *Pentstemon*, all named varieties, including several new sorts, of which Lord Aldenham is a large crimson-coloured flower with a pleasing white throat; Mrs. E. Beckett has rosy flowers, the petals edged with darker rose colour; Lord Lister is a fine scarlet; Rachel is also a meritorious variety. Adjoining the *Pentstemons* was a pretty group of hybrid *Streptocarpus*, the trusses being tastefully arranged in fancy glass vases, and set off with sprays of Maidenhair Fern. The size and shape of the flowers were excellent, the colours ranging through all shades from pure white to dark purple. All the varieties were unnamed (Silver Banksian Medal).

MR. S. MORTIMER, Farnham, Surrey, staged a choice display of Cactus and Show Dahlias. These were very artistically displayed, and formed a most pleasing group. Most of the finer varieties were included, and the individual blooms were well grown. Royal Scarlet is a new variety of the colour indicated by its name, of a pleasing form and of large size. Another unnamed yellow seedling was meritorious, also one having a light centre with a mauve edging. Among such an extensive collection of first-class varieties it is difficult to discriminate, but we may mention H. J. Jackson (very dark crimson), Mrs. Winstanley (fine scarlet), and Mrs. John Barker as being especially meritorious. Among the show types Mrs. D. Saunders, T. W. Girdlestone, and Mrs. Saunders were especially prominent (Silver Flora Medal).

MR. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, set up a large miscellaneous group, in which *Campanulas* were a feature; varieties of small Ferns in 60's were worked along the front of the group, and several larger plants were interspersed through the whole. Plants of *Nerium Oleander rosea splendens* (well flowering) occupied the centre of the group, and varieties of *Campanula isophylla*, including C. i. Mayii, also *Solanum jasminoides*, *Swainsona galegifolia*, and shrubby *Veronicas* were the principal features of this extensive exhibit (Silver Banksian Medal).

MESSRS. VEITCH & SONS, in addition to a collection of hardy flowers tastefully arranged in vases, set up a number of pot-plants of *Begonia Rex*, including several new varieties of these showy plants, of which B. M. de St. Valière is very pleasingly marked. Several well-flowered plants of *Pancratium fragrans* were staged at the background. The centre of the group was occupied with a number of plants of *Begonia Washington*, for which an Award of Merit was obtained. Messrs. VEITCH also displayed plants of *Buddleia variabilis Veitchiana*, carrying long racemes of lavender-coloured flowers; and *Senecio clivorum*, which forms a handsome plant in a damp situation. These are both introductions by Messrs. Veitch, through their collector, Wilson, from Northern China (Silver Banksian Medal).

MESSRS. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, set up a group of *Brainea insignis*, relieved with other suitable plants. This collection was very extensive, and not being cramped for space was displayed to good advantage. The *Braineas* were all specimen plants, well grown, and having clean, well-coloured fronds. Pillar plants of *Lygodium dichotomum* and *L. japonicum* were dotted among the group, and a suitable edging of *Ficus radicans variegata* and small Ferns completed the group (Silver Banksian Medal).

Another group of Ferns, displayed by Messrs. W. BULL & SONS, King's Road, Chelsea, consisted of Tree-Ferns with smaller varieties of Ferns as an edging. *Cyathea dealbata*, *C. medullaris*, *Dicksonia antarctica*, *D. glauca*, were the principal members (Silver Banksian Medal).

MESSRS. R. & G. CUTHBERT, Southgate, Middlesex, set up an extensive group of *Lilium lancifolium album* and *L. l. rubrum*, having a groundwork of Ferns, small Palms, &c., and an edging of vases of *Phlox decussata* "La France," interspersed with Maidenhair Ferns. This was an extensive group and nicely arranged. The *Liliums* were excellent (Silver Banksian Medal).

HARDY PLANTS.

There were several large groups of hardy flowers staged on this occasion, and not a few interesting plants included.

In the group from Mr. AMOS PERRY, Winchmore Hill, were large masses of the best *Eryngiums*, and such plants as *Helenium pumilum magnificum*, *Echinacea purpurea*, *Platycodon grandiflorum*, &c., the fine *Helianthus* "Golden Ball." *Phloxes* were very showy, also *Liatrix spicata*, and *Asclepias tuberosa* with red orange heads of blossoms. *Verbena venosa*, a climbing Polygonum, many Water-Lilies, and other showy things were shown in quantity.

The Sweet Peas from DOBBIE & CO., Rothesay, were a feature. The exhibit was instructive as showing the differences between North and South in the time of flowering, &c. From seeds sown on the same date, somewhere about Good Friday, the flowers came in perfection from Bute, while the ripened seed-pods as seen in the centre of the group were from the firm's branch establishment in Kent. The flowers were very fine in quality, and well disposed in handsome bunches. Some sixty or more vases were staged of a representative collection. Countess of Radnor, Countess Spencer, King Edward VII., Pink Friar, America, Stella More (yellow), the old Gorgeous, and others were included (Silver Flora Medal).

The exhibit from Messrs. BARR & SONS, Covent Garden, included excellent white and coloured *Phloxes*, some good Gladioli, and many varieties of the hybrid Water-Lilies, *Delphiniums*, &c. *Spigelia mari-*

landica, with scarlet tubular flowers, was an exceptional plant, and in good condition. *Gladiolus dracephalus*, with bronzy and yellow flowers, was also of some interest.

Phloxes were abundantly shown by Messrs. GUNN & SONS, Olton, Birmingham. There was quite a large collection of kinds, for the most part well known.

The Gladioli from Messrs. KELWAY & SONS, Langport, were an exceptionally fine lot of flowers, probably one of the best exhibits sent from this firm. Where all were good it is difficult to make a selection, but the following include some very distinct varieties—King of Gladioli (crimson scarlet, very bold and handsome), Bona (yellow), Kenwyn (yellow and fawn), Saltpetre (lovely soft salmon with few spots on the lower petals on a yellow ground), Sultan, The Khedive (both very dark), Miss Wade (almost tubular in form, and white with crimson central stripe), Ajax, Brantford, and Arthur Toms were other showy varieties. A full-length table was occupied by this exhibit (Silver-gilt Flora Medal).

In the exhibit from Mr. M. PRITCHARD, Christchurch, we noted a fine array of *Montbretias* in variety; also *Gladiolus Childsi* in many distinct forms. The white *Scabiosa caucasica* was especially good, and a richly-coloured Day Lily named Dr. Regel was perhaps the finest thing in the group. It is of the purest orange, strongly fragrant, and very refined. *Kniphofia Leonon Queen* (meritorious, clear in colour, and distinct), *Rudbeckia Golden Glow*, the striped *Helenium*, with the white form of *Gladiolus dracephalus*, were other good things in Mr. PRITCHARD's group.

The group by Messrs. CHEAL & SONS, Crawley, embraced such hardy flowers as *Phloxes*, *Eryngiums*, *Montbretias*, &c., with Cactus Dahlias, *Tamarix odessana*, of which a nice lot of sprays were seen, is very pleasing with its pale-pink flowers.

The Messrs. CUTBUSH & SONS, Highgate, also contributed cut hardy flowers. In this group were many good *Phloxes*, Lilies of the speciosum and tigrinum sections, Sunflowers, *Montbretias*, the double scarlet *Lychnis*, several of the best perennial *Marguerites*, Day Lilies, and other things. Among the *Phloxes*, Mrs. E. H. Jenkins, *Roi des Blanchés*, and *Fiancée* were all prominent in the pure white section.

MISCELLANEOUS.

A border Carnation named Merrie England was shown by Mr. JAS. DOUGLAS, Great Bookham. The plant is very free flowering, and was exhibited as cut from the plant without thinning the blooms. The colour is yellow flaked with red.

A seedling Carnation named Strongbow was brought by another well-known Carnation-grower, MARTIN R. SMITH, Esq. The flowers are large, having a primrose ground blotched with dark crimson towards the apex of the petals.

MR. H. W. G. MORRIS, Chipping Norton, also sent three seedling Carnations. Roy Morris is a large self-flowered crimson.

A seedling *Anthemis* was sent by Messrs. J. BLYTHE & SONS, Castle Douglas, N.E.

Two small plants in pots of *Ribes sanguineum* were exhibited by RALPH BROCKLEBANK, Esq., Haughton Hall, Tarporley. The plants were in the seedling stage, and exhibited gold-coloured foliage.

MESSRS. T. ROCHFORD & SONS, Ltd., Broxbourne, sent plants of *Adiantum cuneatum*, var. *Harrisonii*, in which the leaf segments were deeply frilled. This is a very similar variety to *A. heterophyllum*.

MR. JAS. ROSS, Alexandria, N.E., sent blooms of *Chrysanthemum maximum* "Queen Alexandra." An etiolated sport of *Acalypha musaica*, named Cowbarnii was exhibited by A. MARC, Esq., Tring.

W. C. BULL, Esq., Ramsgate, sent a very fine spike of *Gladiolus* "Mabel," a large cream coloured flower, pleasingly suffused with rosy-pink.

MR. JOHN ROBSON, Hale Road, Altrincham, brought a plant of *Bouvardia Humboldtii*, var. Mrs. G. H. Kerslake, with corymbs of large pure white flowers.

AWARDS.

Campanula hybrida Isabel, a dwarf, compact, free-flowering member of the carpatia section. The open flowers are most nearly related to those of *C. c. pelvi-formis*, while the colour is a clear deep violet-blue, and very showy. Shown by Mr. M. PRITCHARD, Christchurch, Hants (Award of Merit).

Dahlia "Radium", a very handsome Cactus variety, with long curving and pointed florets. The colour is

very pleasing in orange and pale-fawn with yellow centre. From Messrs. JAMES STREDWICK & SON, St. Leonards-on-Sea (Award of Merit).

Begonia Washington, a richly-coloured and dwarf-growing plant, that in its freedom and sturdy growth should prove of value in beds in the open. The colour is intensely rich crimson; the medium-sized flowers are produced on short, stout, slightly ascending stalks. The habit is excellent. Shown by Messrs. J. VEITCH & SON, Ltd., Chelsea (Award of Merit).

Gladiolus Valdora.—A very handsome spike, with large, widely-extended flowers. The colour is white with a suffusion of red and pink, and a suspicion of yellow low in the tube of the flower (Award of Merit).

Gladiolus Miss Zena Dure.—A flower of creamy-white and lemon-yellow colour, with red lines in the lower petals. A similar tone of colour is also seen at the base of the flower (Award of Merit).

Both the above were shown by Messrs. KELWAY & SONS, Langport, Somerset.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), W. H. Young, H. M. Pollett, H. A. Tracy, de B. Crawshaw, F. Wellesley, W. Boxall, H. Little, G. F. Moore, M. Gleeson, T. W. Bond, W. Cobb, J. Douglas, J. G. Fowler, and H. Ballantine.

Several groups of good hybrids and some rare species were staged, but apart from the Medals, only one award was made, viz., a Botanical Certificate to the curious *Bulbophyllum Hamelinii*, from Glasnevin Botanic Gardens.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a very interesting group, in the centre of which was a fine specimen of *Vanda Lowii* with four long pendulous racemes of flowers. Arranged with it were three specimens of *Angraecum Eichlerianum*, a showy set of varieties of *Laelio-Cattleya callistoglossa*, L.-C. × *Bletchleyensis*, and L.-C. × *callistoglossa*. The finest in colour was L.-C. × *Bletchleyensis Non Plus Ultra*, a large flower of a glowing rose-purple with rich claret-crimson lip. Among the *Cypripediums* were the new C. × *Williamsonianum* (Lecanum × *Ellipticum*) with the peculiarly elongated and extended petals usual to hybrids of its class. The pretty round dorsal sepal was white with an emerald green base and dotted purple lines; petals yellowish tinged and spotted purple; lip of a brownish-rose hue. C. × A. de Lairese had three spikes bearing together a dozen fine flowers; C. × *tonso-Rothschildianum*, a large yellowish flower finely marked, was very distinct. C. × *Rothschildovillosum*, C. × *Annie Measures*, C. × *Flambeau*, C. × *Harveyanum*, C. × *Transvaal*, and C. × *callo-Rothschildianum*, were also well shown; and *Cattleya* × *Patrocini-aurea*, a pretty rose-coloured flower with yellowish centre to the lip.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured a Silver Flora Medal for a good group rich in showy hybrids, among which were good varieties of *Cattleya* × *Lord Rothschild*, C. × *Niobe*, C. × *Iris*, C. × *Germania*, C. × *Mary Gratrix*, two fine varieties of *Laelio-Cattleya* × *Madame Chas. Maron* (*Digbyana* × *Warszewiczii*), and other showy hybrids. The centre of the group was of *Oncidium incurvum*, with many elegant white-and-rose sprays. On each side were specimens of *Vanda cornuta*, one with four spikes; also present were *Miltonia Schroderiana*, M. *Regnellii citrina*, M. × *Bleuana grandiflora*, *Brassia Lawrenceana longissima*, *Cynoches chlorocheilon*, *Cypripedium* × *Io maximum magnificum*, and the pretty C. × *Princess* (*Fairieanum* × *Mons. Coffinet*).

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Banksian Medal for a neat group of hybrids, including good forms of *Laelio-Cattleya* × *callistoglossa*, L.-C. × *Remula*, L.-C. × *Epicasta*, L.-C. × *Clonia*, *Cattleya* × *Niobe*, C. × *Atalanta*, &c.

Messrs. CRIPPS & SON, Tunbridge Wells, showed a very effective group of about one hundred excellently well-grown plants of *Disa grandiflora*, well furnished with large bright scarlet flowers, and for which a Silver Banksian Medal was awarded.

Messrs. HUGH LOW & CO., Enfield, showed a group in which were a fine specimen of *Cypripedium grande*, good plants of *Cattleya guttata*, C. *Loddigesii*, C. *Warszewiczii*, C. *granulosa*, and C. *bicolor*. Of the last-named one variety had purplish-chocolate sepals and petals and rose lip; and the variety *Grossii* had an unusually broad rosy-lilac labellum.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cypripedium* × *Heiro*, Eden-

side variety (*Lawrenceanum* × *Chamberlainianum*), a very pretty hybrid, with the round upper sepal yellowish-green, with dark purple lines; petals ciliate, greenish, closely marked with nearly black spots, lip rose, yellowish at the upper edge and with purple warts on the infolded side-lobes. Mr. WELLESLEY also showed *Cypripedium* × *Wiertzianum* and *Bleu's* variety of it, which is larger and more closely marked; the pretty *Cattleya* × *Patrocini*, Westfield variety, and *Cattleya Eldorado crocata superba*, pink with large orange disc to the lip.

AWARDS.

BOTANICAL CERTIFICATE.

Bulbophyllum Hamelinii, from F. W. MOORE, Esq., Botanic Gardens, Glasnevin, Dublin. A very extraordinary species first introduced from Madagascar by Messrs. SANDER & SONS ten years ago, but not flowered in gardens until 1902, when it first flowered at Glasnevin.

The inflorescence sent had a stout compressed stem about 8 inches in length, terminating in a decurved closely-set cylindrical head of flowers, each about $\frac{1}{2}$ -inch long, and $\frac{1}{4}$ -inch wide. The number of flowers in the raceme was over 100, each flower being furnished with a broadly ovate purple-spotted bract, which in some stages exceeds the length of the flower and covers it. The upper sepal is concave at the base and recurved at the tip, the lateral ones meeting in front, all white, lightly marked with purple on the inside, and more heavily on the outside. Lip hinged, broad and tongue-like, white beneath, dark purple above; column white; petals subulate, inconspicuous. It is malodorous like *B. Beccarii*. The plant has large compressed yellowish-green pseudo-bulbs, furnished with thick leathery dark-green leaves, the whole reminding one of *Oncidium ampliatum*. It grows best on a bare raft or shallow basket, with but little peat or moss. It should be grown in a warm house.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (Chairman); and Messrs. Jas. Cheal, H. J. Wright, S. Mortimer, Alex. Dean, Geo. Kelf, R. Lewis Castle, James H. Veitch, Henry Parr, Owen Thomas, F. Q. Lane, G. Norman, W. Poupart, and H. Somers Rivers.

The principal group submitted to this Committee was an extensive collection of vegetables and fruit staged by THE UNIVERSITY COLLEGE, Reading. The group occupied the whole of a lengthy table, and contained useful specimens of vegetables and fruit, grown for ordinary market purposes. Tomatoes were excellent, such standard varieties as *Chemin Rouge*, *Champion*, and *Conference* being shown to perfection. Potatoes were also good, and in numerous varieties. Onions, Beans, Parsnips, Beet, Cauliflowers, Cucumbers, Cabbage, &c., were included. Some excellent Melons were noticed, and a box of well-finished Peaches and Nectarines. The group would have been somewhat enhanced by a more judicious method of arrangement; still, the whole was highly creditable, and illustrative of the good work carried on in the gardens at Reading (Silver Knightian Medal).

Mr. G. PENWILL, Totnes, Devon, staged fruits of their new Raspberry *Penwill's Champion*, which received an Award of Merit at the Holland House Show.

Mr. W. A. COOK, Shirley Park, sent an unnamed seedling Tomato and a box of well-grown fruits of "Amsden June" Peach. The Tomatoes, which were said to be of excellent flavour and cropping qualities, were disqualified on account of being unnamed.

Miss ADAMSON, South Villa, Regent's Park, sent a collection of dessert Plums, all choice varieties and well grown, especially when the fact of their being grown so near the metropolis is considered. The varieties included Early Transparent Gage, Kirk's Golden Gage, McLaughlin Gage, Green Gage, Reine Claude Comte Althain, Jefferson, and Emperor (Silver Banksian Medal).

Sir A. K. OSBORN, Bart., Chicksands Priory, Shefford, Beds., sent two dishes of Apple Gladstone. This is a highly coloured fruit, and is one of the very earliest to ripen. Unfortunately the flavour is acid and sharp, and the flesh mealy. The same variety was also displayed by W. ROUELL, Esq., Harvey Lodge, Roupell Park.

JOHN HODGES, Esq., The Rusper Vineries, Fay Gate (gr., Mr. T. M. Le Pellay), sent two stands of black Grapes of the varieties Alicante and Gros Maroc respectively. Some of the former bunches were large and of good shape; the Gros Maroc required a little deeper finish.

Messrs. T. RIVERS & SON, Sawbridgeworth, sent a box of the new Peach *Peregrine*. The fruits were of large size and finely coloured, while the flavour is said to be excellent. The same firm also brought a box of Plum Golden Transparent Gage.

Mr. H. PARR, Trent Park, New Barnet, sent six fruits of Tomato *Coronation*. The fruits were of large size, the six berries weighing as much as 5 lb. Large size in Tomatoes is not desirable, a medium-sized fruit is more in demand.

NEWBURY HORTICULTURAL.

AUGUST 1.—The fifty-sixth annual show of this well-known Society was held on the above date in the beautiful grounds of Goldwell Park, an ideal place for a show. There was no lack of visitors, and there was a record entry for fruit and cut flowers. In the large plant classes Mr. CHAS. ROSS, of Welford Park, was the leading exhibitor.

For stove and greenhouse plants in bloom, Mr. T. SURMAN, Donnington Grove, had nicely-flowered specimens, including good *Clerodendrons* and *Stephanotis*. Mr. C. ROSS, Welford Park, had the best collection of large foliage plants, having fine *Crotons* and *Alocasias*. The best specimen foliage plant also came from this exhibitor; while Mr. T. SURMAN was 1st for the best specimen plant in bloom. *Gloxinias* were plentiful, while *Begonias* made a good display.

A class which creates interest at Newbury is the model conservatory arrangement or grouping for effect. Some distinct features of arrangement were seen, and the premier award was secured by Mr. J. HOWARD, Benham Park Gardens.

Roses were fewer in number than usual, the hot weather doubtless being the cause. Messrs. COOLING & SON, Bath, and J. R. TRANTER, Henley, had some choice blooms. Lady SUTTON's exhibit was 1st in the Amateur classes, and Mr. H. SMITH's, 2nd. Messrs. J. T. MERCHANT and ABERY had the best bridal bouquets. Messrs. SMITH and SURMAN the best Sweet Peas.

Carnations made a grand show, though a few of the blooms lacked size. Mr. A. GALT, Aldermaston Court Gardens, was an easy 1st; Mr. ROSS, 2nd.

Dahlias were good. Mr. TRANTER was an easy 1st with perfect flowers; Mr. BOSLEY, 2nd.

For twenty-four bunches of cut flowers the 1st prize was taken by Mr. SMITH; Messrs. ABERY, 2nd.

The fruit shown was excellent. Mr. HOWARD was 1st for a collection, and Mr. WATERHOUSE 2nd.

Mr. HOWARD was 1st for a collection of vegetables, having excellent Duke of Albany Peas, Windsor Castle Potatoes, and Ailsa Craig Onions; Mr. SURMAN was 2nd.

Amateurs and cottagers also made a display both of vegetables, plants, and cut flowers.

We heartily congratulate the Committee on the excellence of their arrangements and the continued success of the Society.

BRITISH PTERIDOLOGICAL.

AUGUST 1.—The usual annual meeting of this Society was held at Bowness-on-Windermere, on Monday, the August Bank Holiday, when, owing to the unavoidable absence of the President (Dr. F. W. Stansfield, of Reading), Mr. Chas. T. Drury, F.L.S., V.M.H., one of the vice-presidents, took the chair. Both the Secretary's and Treasurer's reports demonstrated the success of the Association, financially and numerically; and as an item of the formal business of the meeting, Mr. W. H. Phillips, of Belfast, was elected President for the coming year, Dr. Stansfield's professional duties having induced him to resign. Mr. Phillips, ranking as he does as one of the pioneers of the cult, and the finder of a number of the choicest varieties, is undoubtedly peculiarly qualified for the position.

Mr. Drury, though unprepared with a formal address, emphasised the particular points which render the British Fern cult of special interest. In no other branch of horticulture is it possible to accumulate and exhibit splendid collections of distinct and beautiful varieties, wholly and entirely independent of exotic or foreign introductions. For some occult reason, British air seems to inspire Nature with novel ideas in the Fern direction, so that we are constantly being enriched with the results. He furthermore pointed out that, thanks to the careful records kept for the last half-century and more, a mass of information has accumulated which is being recognised as of great value in connection with the vexed question of variation and its laws.

Obviously the sports are not dependent upon cultivation, as many thought, since all the marked types originate wild. The recent results of Professor Farmer's research, and embracing the discovery of an analogy between the forms of the cells in cancer and those of the abnormal reproductive cells in Ferns, were also touched upon as additional evidence that the study of Ferns in their varietal forms could lead to results of immense value, apart from the mere acquisition of more and more beautiful ones. Mr. Drury then read a paper on the British Polypodies, which will eventu-

ally appear on the Society's report. A number of fronds and plants were exhibited for naming, and among the latter was a beautiful new variety of the hard Fern, *Blechnum spicatum*, found in the Black Mountains of Ireland by Mr. W. Porter. This has a heavy flat foliose crest divided into three on the lines of the Prince of Wales's feathers, and was consequently named *B. s. triplicatum*, Porter, and given a Certificate of Merit. Mr. Alex. Cowan exhibited fronds of a fastigiate form of *L. dilatata* found in Scotland, another of Nature's novelties, and quite distinct from any known variety. *L. dil. fastigata* was the name given thereto. The Society then resolved to meet at the same place and time in 1905, and with a hearty vote of thanks to the Chairman the function concluded.

STANSTED FLOWER SHOW.

AUGUST 3.—The thirteenth annual show was held on the above date at Blythwood, and in all respects was one of the most successful the Society has had. A special feature was the dinner-table decorations, eighteen tables being tastefully arranged by ladies. In the evening the grounds and dairy at Blythwood were thrown open to the visitors. Exhibits not for competition included Roses and herbaceous plants from Messrs. PAUL & SON, Old Nurseries, Cheshunt; group of plants and collection of fruit from Sir JAMES BLYTH (gr. Mr. J. Richardson); Dahlias and Carnations from Dr. ROWELL, C.M.G., and a collection of vegetables from G. ALDER, Esq. (gr. Mr. Atkins). In the Hargrave Stansted competitive classes the best group of plants came from C. GOLD, Esq. (gr. Mr. Clarke). The best Peaches were shown by C. GOLD, Esq., Jun. (gr. Mr. Amey), and the 1st prize grapes by Mr. GRIPPER. The amateurs' and cottagers' exhibits were excellent.

MIDLAND CARNATION & PICOTEE.

AUGUST 4, 5.—This took place as usual in the show-house of the Botanical Gardens, Edgbaston, Birmingham, the competition being keen in all the classes. The bizarre and flaked Carnations and white-ground Picotees, the yellow-grounds and fancies, were all of good quality, the white-ground Picotees being especially fine; the self Carnations, being among the earliest to flower, were small, though very showy. The arrangements made by Mr. THOS. HUMPHREYS, the Curator, were excellent, so that the flowers were seen to great advantage. There was, as usual, a large attendance, and social amenities were observed by a large party sitting down to luncheon in the grounds, under the chairmanship of Mr. ROBERT SYDENHAM.

Carnations, Selfs.—The class for twelve varieties brought five exhibits, Mr. R. C. CARTWRIGHT, King's Norton (gr. Mr. Rudd), taking the 1st prize with good blooms of Her Grace, Carabas, Sea Gull, Enchantress (a beautiful rose self), Benbow, Mrs. Guy Sebright, Sir Bevis, Germania, Cassandra, Ensign, Barras, and Comet. Mr. A. R. BROWN, Handsworth, was 2nd. Among his flowers were Gloriosa (a beautiful blush self) and John Pope (a grand rose self). Mr. C. H. HERBERT, Acocks Green, was a very good 3rd.

There were nine competitors with nine selfs, Mr. W. H. PARTON, King's Heath, having well developed blooms of W. H. Parton (a rich maroon self of fine quality), Seagull, Benbow, Sappho, Mrs. E. Hambro, and Germania; 2nd, the Rev. G. A. GOTTLWALTZ, Droitwich, who had John Pope, of which he was the raiser, in fine character; 3rd, Mr. W. H. TWIST, Yardley.

Picotees, Yellow Grounds.—There were seven competitors with twelve varieties, Mr. A. W. JONES, Sleaford, taking the 1st prize with splendid blooms of Lady St. Oswald, Isolt, Gronow, Lucy Glitters, Mrs. W. Heriot, Chryseis, Coquette, Peri, Countess Verulam, Lord Napier, Gertrude, and Dalkeith. Mr. C. F. THURSTAN came 2nd with some fine blooms; and Mr. C. H. HERBERT, 3rd.

The class for six blooms brought eight competitors, Mr. W. H. TWIST taking the 1st prize with finely developed blooms of Gronow, Alcinous, Lady St. Oswald, Daniel Defoe, Countess Verulam, and Gertrude; Mr. W. H. PARTON was 2nd; and Mr. J. MITCHELL Walsall, 3rd.

Carnations, Fancy.—There were seven stands of twelve varieties, some splendid blooms being staged. Mr. R. C. CARTWRIGHT came 1st with Voltaire, Professor Cooper, Argosy, Ormonde, Queen Bess, Amphion, Galileo, Hidalgo, Emperor, Perseus, Cantatrice, and Ivo Sebright. Mr. A. W. JONES was 2nd, his blooms being very near indeed to those awarded the 1st prize. Mr. A. R. BROWN was 3rd.

In the class for six fancy Carnations there was good competition also.

Picotees, White Grounds.—There were five collections of twelve blooms, Mr. F. W. GOODFELLOW, Walsall, taking the 1st prize; Messrs. W. PEMBERTON & SON, Walsall, being 2nd. Here again the flowers were of very fine quality.

The best six blooms were shown by Mr. J. EDWARDS, Blackley, Manchester; he had in superb character H.P.E. Ganymede, L.P.E. Lavinia, H.Ro.E. Mrs. Bes-

wick, H.P.E. Fanny Tett, H.P.E. Mrs. Openshaw, and H.P.E. Lady Louisa. 2nd, Mr. W. H. TWIST; 3rd, Mr. H. BOYS. Most of the flowers shown in this class belonged to the purple-edged section.

Carnations, Flakes and Bizarres.—With twelve blooms Messrs. W. PEMBERTON & SON were 1st with C.B. Robert Houlgrave, P.F. Gordon Lewis, R.F. Merton, P.F. George Melville, R.F. Thalia, C.B. J. S. Hedderly, P.P.B. George Rudd, S.F. Sportsman, P.P.B. W. Skirving, S.F. Flamingo, S.B. Robert Lord, P.P.B. Sarah Payne. 2nd, Mr. C. H. HERBERT; 3rd, Mr. C. F. THURSTON. With six blooms, Mr. J. EDWARDS came 1st, he had J. S. Hedderly, Robert Lord, Sportsman, P.P.B. J. D. Hextall, R.F. Mrs. T. Lord, C.B. Robert Houlgrave; 2nd, Mr. E. C. ROSSITER.

Single Blooms.—The following is the order of merit for the various types—Scarlet bizarres: Admiral Curzon and Robert Houlgrave. Crimson bizarres: Arthur, a fine new variety; J. S. Hedderly, and J. D. Hextall. P.P. bizarres: William Skirving and Geo. Rudd. Scarlet flakes: Guardsman and Sportsman. Purple flakes: Gordon Lewis, which was 1st and 2nd. Rose flakes: Rob Roy, Mrs. T. Lord, and Mrs. Rowan. H. red E. Picotee: J. Smith and Brunette. Light red E.: Thos. Williams, won all three prizes. H.P.E.: Mrs. Openshaw and Fanny Tett. L.P.E.: Pride of Leyton and Lavinia. H.Ro.E.: Mrs. Payne, Apisie, and Lady Louisa. L.Ro.E.: Favourite and Nellie. Y.G. Picotee: L. E. Pilgrim and Lord Napier. Y.G.P.H.E.: Lucy Glitters, Iscult, and John Whitham. Y.G. fancy: Queen Bess, Monarch, and Hidalgo. Fancy Carnation: Ivo, Sebright and Millie. Selfs, white: Mrs. E. Hambro and Much the Miller. Blush: Seagull and Blushing Bride. Yellow: Germania took the first three prizes over all the newer yellows. Buff: Mrs. R. C. Cartwright (a fine new variety) and Benbow. Rose: John Pope (extra fine) and Carabas. Scarlet: G. W. Crane (fine in colour) and Isinglass. Dark crimson: W. H. Parton (new), this was so fine that it won all the leading prizes. Purple: Cassandra, Richard Dean, and Jupiter. Any other dark self: Jocelyn and Lady Jane Grey, both shades of heliotrope.

Undressed and Border Carnations.—These were largely shown, and their fine character was the theme of general commendation. In these classes a little dressing of the petals is permitted, but as little interference as possible is desired. Complaint was however made that this is carried too far, the calyx being manipulated. But it is felt to be extremely difficult to limit the permission. Twelve selfs, each bloom in a small vase, 1st, Mr. R. C. CARTWRIGHT; 2nd, Mr. A. R. BROWN. Mr. W. H. PARTON was 1st with six selfs; Mr. A. W. JONES with twelve fancies; Mr. W. H. PARTON with six; and then followed eight classes in which three blooms of one variety were staged in small vases.

The amateur cultivators, who grow only a limited number of plants, had five classes open to them, in which the blooms were shown on cards, the competition being very good.

Premier Blooms.—The selection of these gave the judges some trouble. Bizarre Carnation C. B. Arthur, from Mr. R. SYDENHAM; flake P. F. Gordon Lewis, from Mr. E. C. ROSSITER; Picotee, white ground, heavy edge, H.P.E. Mrs. Openshaw, from Mr. T. W. GOODFELLOW; light edge, Thos. William, from Messrs. W. PEMBERTON & SON; heavy edge, yellow ground, Dalkeith, from Mr. A. W. JONES; light edge Y.G., Child Harold, from Mr. W. H. PARTON; Y.G. fancy, Queen Bess, from Mr. A. W. JONES; self, W. H. Parton, from Mr. R. SYDENHAM. The best undressed self was Much the Miller, white, from Mr. T. R. WARD; Y.G. Picotee, Mrs. W. Heriot, from Mr. A. W. JONES; fancy, Henry Gough, from Mr. A. R. BROWN.

Certificates of Merit were awarded to the following seedlings:—Yellow-ground fancy Cadmus, heavily marked with bright scarlet on a bright yellow ground, from Mr. R. C. CARTWRIGHT; Mrs. R. C. Cartwright, orange-buff, extra fine, also from Mr. CARTWRIGHT; and to yellow-ground Picotee Mrs. C. Mansell, in the way of Child Harold, but distinct, from Mr. C. H. HERBERT.

Miscellaneous Exhibits.—There were several miscellaneous exhibits of an interesting character, and the Society's Silver-gilt Medal was awarded to Messrs. GUNN & SON, Olton, and to Messrs. HEWITT & CO., Solihull, both with fine exhibits of cut flowers. The large Silver Medal was awarded to Mr. W. A. WATTS, St. Asaph, for a fine collection of Carnations shown in trumpet vases; to Messrs. DAVIS & SONS, Veovil, for Begonias; to Messrs. DICKSONS, Chester, for cut flowers; to Mr. M. PRITCHARD, Christchurch, for hardy flowers, and Silver Medals to Mr. J. LAMBERT, Southampton, for Carnations; Mr. S. MORTIMER, Farnham, for Cactus Dahlias; to Mr. V. SLADE, Taunton, for zonal Pelargoniums, and to Mr. J. H. WHITE, Worcester, for cut flowers.

Some pretty floral decorations with Sweet Peas were shown in small tables, Mrs. MARTIN took the 1st prize; there were also bouquets, sprays, and buttonholes, and Mr. R. SYDENHAM's special prizes for Sweet Peas brought six collections, Mr. T. JONES, Ruabon, taking 1st prizes with very fine examples of the newer sorts.

SCOTTISH HORTICULTURAL ASSOCIATION.

AUGUST 6.—THE visit to Dalkeith Gardens was postponed to the above date, when over one hundred members took advantage of the opportunity to inspect these famous gardens. The weather unfortunately was unpropitious, rain falling continuously, and sadly marring the pleasure of the outing. The borders were excellent, especially the scroll border on the east lawn, which was never finer. *Lobelia Waverley*, of much the same shade of blue as *Wave of Blue*, was employed here with telling effect. Carnations are a feature, these being cultivated in the vegetable-quarters in vast numbers; and of the vegetables it may be said they are extra fine.

The display of bloom in the plant-houses was quite as fine as had previously been remarked on the outside. In the warmer structures a grand batch of *Hymenocallis* was just throwing out spikes, and a houseful of *Calanthes* was remarkable for the vigour and health of the plants. Of fruit, Melons were bearing freely, and Pines were in the usual good condition for which they have so long been celebrated at Dalkeith; Peaches unfortunately had not set so well as usual, but the growth promises well for another season. In the vinerias large bunches were entering on the ripening stage. It was the general remark how well Mr. Whytock had everything in hand. After a walk through the grounds, a company of 101 was entertained at tea by Mr. McHattie, the usual votes of thanks concluding the proceedings.

DUNDEE HORTICULTURAL ASSOCIATION.

AUGUST 6.—The members' excursion to Brechin Castle Gardens took place, in conjunction with the Broughty Ferry Horticultural Association, on the above date. Arriving by train at Brechin the company was met at the station by Mr. McDowall, the head gardener, and from thence conducted through the grounds to the spacious ranges of glasshouses, where everything was observed to be in a clean, healthy condition. The plant houses presented a very bright and gay appearance. The fruit houses are not confined to fruit alone, but made attractive with foliage and flowering plants. The lawns, pleasure-grounds, flower-beds, and borders have all an attractive appearance. In the vegetable and fruit garden the same good order and management are seen. After tea, which was served in the verandah at the stables, Mr. David Storrie expressed the company's thankfulness to the Earl of Dalhousie for granting permission to inspect his beautiful domain.

Obituary.

MR. RICHARD GORTON.—This gentleman, who was a strong supporter of floriculture in the North, died at his residence, The Woodlands, Eccles, on the 2nd inst., at the age of seventy-two years. A florist of the old school, he took a deep interest in all special floricultural societies and their work, the alpine *Auricula* being his favourite flower, and few men had a keener appreciation of the properties of florists' flowers, and more warmly advocated their observance. He was a raiser of alpine *Auriculas*; the *Carnation* and *Picotee* were also favourites with him. He usually attended the *Auricula* shows held in the Midlands and at Manchester.

MRS. WM. RICHARDSON.—This estimable woman, wife of Mr. William Richardson, the foreman at the Hassocks Nurseries of Messrs. W. Balchin & Sons, passed away on the 2nd inst., after a short illness, at the age of forty years, leaving a young son.

JOHN HINDE NEWBERRY.—It is with great regret we record the death of Mr. John Hinde Newberry, which took place very suddenly on Thursday, August 4, in his sixty-fourth year, after an operation which had apparently been successful. For over forty-five years he had been in the employ of Messrs. Hugh Low & Co., formerly at the Clapton Nurseries, and recently at Bush Hill Park Nurseries, Enfield. Most visitors to the nurseries during the past forty years have come into personal contact with him. He came to Clapton in 1859 from Upwey, Dorchester, where his father carried on a nursery; and John Hinde was not only an excellent correspondent and book-keeper, but a thoroughly practical man, few being able to handle spade or

knife better. He was interred at Edmonton Cemetery on August 6, a good many of the old Clapton and Bush Hill friends being at the funeral. He leaves four sons, three daughters, and a large circle of friends to mourn his loss, his wife having died two and a half years since.

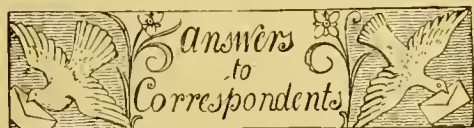
TRADE MEMORANDUM.

HEWITT & CO., LTD.—Mr. Addenbrooke has been appointed managing director in the place of Mr. J. Evans. Mr. Spinks is attached to the Company as before. The principal nursery is at Solihull, and there are branches at Edgbaston and depots in Birmingham.

MESSRS. RANSOMES, SIMS & JEFFRIES, of Ipswich, have had the honour of supplying a motor lawnmower to H.M. the KING for use in the gardens of Buckingham Palace.

ENQUIRY.

CAN any reader recommend a correspondent a simple, inexpensive form of level on tripod stand?



*** EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ABIES NOBILIS: J. M'C. The gouty swellings are caused by an insect, Chermes. Cut away the diseased branches and burn them. Spray the tree with petroleum emulsion. (See *Gardeners' Chronicle*, p. 109, July 22, 1882).

BOOKS ON SOUTH AFRICA: C. South African Flowering Plants, by Rev. Prof. G. Henslow; published by Messrs. Longman & Co. We do not know of any work on gardening or farming in the colony you mention.

BOOK ON TOMATOS: Constant Reader. We do not know of any work containing a lengthy description of the history of the Tomato.

CEDAR OF LEBANON: C. R. W. We do not know all the circumstances, but think it likely that the tree is suffering from the years of drought that we had prior to 1903. Perhaps the tree is an old one, and is slowly dying, as so many are about London. Examine the trunk carefully to see if there are fungi attacking it. Remove the decaying branches flush with the trunk, if that be possible, and paint over the wound with tar.

CONIFER: S. Devon. It is probable that your Conifer has got injured at the roots. Perhaps it is in unsuitable soil. If not sufficiently moist you might try the effect of a thorough watering. Liquid-manure would not be likely to be beneficial in its present condition. Many trees all over the country are only now showing the disastrous effects of the series of dry summers we had prior to 1903.

CORRECTION.—We are informed that an error was committed when we stated that Mr. Pitt was awarded a Silver Banksian Medal for a group of Orchids at the recent show in the new Hall. No medal was awarded to Mr. Pitt on that occasion.

CUCUMBER: G. M. The condition you mention is due to some temporary check during growth. What caused that you should know better than we.

CUCUMBER-SPOT: J. H. Frequently described and figured in the *Gardeners' Chronicle*. See specially October 14, 1902, p. 241, and September 5, 1903, p. 184.

CURLED GREEN: L. S. M. It is very likely to have been crossed, as you suggest. The members of the Cabbage family readily cross with one another, and have produced the numerous diverse forms and types seen in our gardens.

DAHLIAS: H. B. We do not find any particular dimensions specified. Consult the catalogue of the National Dahlia Society, to be had from P. W. Tulloch, Esq., Forest Cot, Balcombe, Sussex.

DAFFODIL CROSSING: H. V. M. It is impossible to answer your inquiry in brief. The sum of research seems to indicate that in both the animal and the vegetable kingdoms, the influence of the male is on the whole the greater in determining the characters of the offspring. But this law will not be found to be uniform in dealing with a limited number of flowers. Nothing short of a large number of repeated experiments will teach you whether such flowers as you name should be used as pollen-parents or seed-bearers respectively, and it will certainly be better to begin by effecting your crosses both ways. You should work with a considerable number of flowers, and keep accurate records. G. H. E.

FLOWER-SHOW SCHEDULE: S. G. S. We have not seen the schedule, but assuming your statement to be correct, we think the judges were in error. The two Galegas are quite distinct. A Lily bulb is an herbaceous plant, and may, in the absence of any statement to the contrary, be exhibited with herbaceous plants. Some judges, however, object to this. The white Bryony, *B. dioica*, is likely to be poisonous to cattle. The black Bryony, *Tamus*, is probably dangerous, but we have no experience of it.

GARDEN PLAN: R. W. S. We counsel you, if you want further advice, to seek the assistance of some landscape gardener who can visit the spot and see its capabilities, the level of the land, whether there is a distant view to be had, and so on. So far as we can tell from your plan not much need be done if the lawn is in good order. We should certainly not remove the Weeping Ash. We should fill up the north-east corner with a clump of Rhododendrons or other shrubs to hide the formal right angle. At the other corner (N.W.) near the rockery you might plant a group of flowering Cherries or other spring-flowering trees. A specimen Conifer might be placed near the south-east angle. A few flower-beds, especially Rose-beds, might be cut out on the lawn near the margins, but by no means let them be so many or so large as to interfere with the fine sweep of the lawn. On the bank behind the rockery some Wichuriana Roses might be allowed to scramble at the base of the trees.

GARDENERS' ADDRESS BOOKS: A. N. *Horticultural Directory*, 12, Mitre Court Chambers, Fleet Street, London; and *The Garden Annual*, 17, Fumival Street, Holborn, London, E.C.

GARDENERS' ASSOCIATION: B. F. G. Write for the pamphlets issued by the Committee, and obtainable from the Honorary Secretary (pro tem.), W. Watson, Esq., Descans House, Kew Road, Kew.

IMMATURE FIGS DROPPING: E. P. I have known this failure since 1862, when I first saw it at Highgate. There is no fungus, and I could never detect any, although I have searched many times. It was at one time a common complaint of those who tried to grow Figs in the open that as soon as they became as large as Gooseberries they dropped, and not a fruit was matured. I could never solve the mystery. M. C. C.

JUDGING: W. C. L. We have no data on which we can answer your question. The fee varies in different cases from one to two guineas and upwards.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—G. M. *Lilium chalcidonicum*.—A. B. 1, *Inula Helenium*; 2, *Lychnis chalcidonica*; 3, *Agrimonia* sp.; 4, *Lythrum Salicaria*; 5, *Betonica rosea*; 6, *Polygonum* sp. The cup-like flowers of the Fox-glove result from the running together of two or three of the topmost flowers.—W. B. *Lycium sinense*, commonly but erroneously called *L. barbarum*.—F. B. M. *Helianthus* (*Harpalum*) *rigidus*.—G. H. S. *Kolreuteria paniculata*.—W. S. *Olearia Haastii* (New Zealand).—Roebuck. *Cypripedium Parishii*.—V. A. R. 1, *Oncidium pumilum*; 2, *Oncidium pubes*; 3, *Sophranitis violacea*.—T. R. 1, *Dracena ornata*; 2, *Codiaeum* (*Croton*) *Johannis*; 3, *Codiaeum variegatum*; 4, *Dracena stricta*; 5, *Codiaeum Weissmanii*; 6, the Palm may be *Areca lutescens*; 7, *Dracena variabilis*; 8, garden Fuchsia, cannot be named; 9, *Dracena pulcherrima*; 10, *Codiaeum Queen Victoria*.—Cosmos. *Hippeastrum stylosum*, illustrated in the *Botanical Magazine*, t. 2287. We replied to your question before, in our issue of July 23, p. 68.—F. I., Grimsby. A light form of *Oncidium Gardneri*.—W. M. *Crococsmia imperialis*.—W. W., Bagshot. 1, *Juncus communis*; 2, *Juncus effusus*; 3, *Campanula rotundifolia*; 4, *Festuca ovina*; 5, *Blechnum spicant*; 6, *Lysimachia vulgaris*.

NYPHÆAS: Correspondent. We do not publish coloured illustrations, and if we did we should not sell them. We do not know of any special work on the subject, but any of the more important gardening books contain full descriptions as to treatment, &c.

NOTICE: J. O. Your notice should have been dated from the 8th, not the 2nd.

PEACHES: H. W. 1, *Crimson Galande*; 2, *Abec*. Specimens arrived in a crushed condition.

PEAR: G. E. S., Plymouth. The Pear is attacked with a fungus—*Ensieladium dendriticum*, frequently described and figured in our columns. Burn the affected leaves and fruits as far as you can, and next year spray the leaves and shoots with weak Bordeaux-mixture.

PROPAGATING DAPHNE, &c.: *Anxious One*. The choicer varieties and species of *Daphne* are usually grafted on *D. indica* or *D. laureola*. They may, however, be propagated from cuttings taken in the autumn and inserted in well-drained pots with peaty soil and covered with a bell-glass. Keep the cuttings in a cool house in the winter, and in the spring introduce into gentle heat. *Luculia gratissima* can be propagated from cuttings inserted about now, placed under a bell-glass, and for two or three weeks allowed a gentle bottom heat. They are not easy subjects to propagate. If seed can be obtained this will germinate freely.

STRAWBERRIES: Auldearn. The flowers were probably not fertilised. See leading article in *Gardeners' Chronicle* for August 6.

TOMATOS: J. C. The disease is caused by a fungus—*Cladosporium fulvum*, often mentioned in the *Gardeners' Chronicle*. Burn the affected plants and spray the healthy ones with liver-of-sulphur 4oz., to a gallon of rain-water. Do this at intervals of a week or ten days.

VINES: B. M. A bad case of "shanking," the exact cause of which is still uncertain, but probably it is due to the attack of a fungus. In your case the bunches look as if they had not been sufficiently thinned, and are carrying more berries than they can ripen properly.

COMMUNICATIONS RECEIVED.—J. M.—W. S.—J. McC.—R. H. P.—E. S. C.—E. H. J.—G. B.—G. D. (photograph, with thanks)—G. W.—Rev. G. T. L.—J. M.—W. H. P.—Antigua—Waveren & Kruijff, Haarlem—T. W.—W. W.—T. E., Ceylon—E. C.—Sir N. L.—J. R.—W. P. R.—M. R. S.—J. B. F.—W. M., Naples—C. R. W.—S. F. & Co.—W. G. S.—W. H. C.—J. P.—B. S.—F. C. H.—L. F.—F. C.—Dr. Bonavia.—J. S.—E. T.—W. H. B.

(For Markets and Weather, see pp. x. and xii.)



TROCHETIA BLACKBURNIANA FROM STRAFFAN HOUSE GARDENS, CO. KILDARE; PETALS WHITE WITH ORANGE-RED STRIPES AND MARGINS.



THE

Gardeners' Chronicle

No. 921.—SATURDAY, August 20, 1904.

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GEOGRAPHICAL DISTRIBUTION OF PLANTS.*

THIS formidable volume, with upwards of 800 8vo pages, and full of beautiful photographs and other illustrations, is a masterly reservoir of literature upon the new branch of botany known as "Ecology," or the study of plants in their natural homes.

Linnaeus in 1763 observed that plants brought from various countries could be recognised by their "facies" or general appearance as inhabitants of special environments, and many writers have described the plants characteristic of certain districts, as for instance, Griesbach, in his *Vegetation of the Globe*; but since evolution, thanks to Darwin, has been brought to bear upon plant distribution, in addition to mere description, we have entered upon the study of plant-structures in relation or adaptation to their various kinds of environment.

"Darwinism" attributes all such adaptations to natural selection, but the more

recent observers regard the conditions of life as the main cause, together with the responsive power of the plants themselves. These were Herbert Spencer's "two factors" of evolution.

Dr. Schimper's mind was in a transition state, for he observes (p. 24) in alluding to certain degradations in aquatic plants:—"It is only doubtful whether they are to be attributed to natural selection or to the direct influences of water." He was not aware of Mr. McCallum's experiments with *Proserpinaca*, in which by inducing artificial osmosis, he caused the superfluous water to escape from the protoplasm, so that "entire" leaves were formed under water instead of the normal filiform ones.

All through the book, however, Schimper invariably speaks of the influence of the environment as the direct or definite cause of variations of structure.

The book is divided into three parts—viz., I., The Factors; II., Formations and Guilds; III., Zones and Regions.

In the first part there are six chapters, dealing with the influences of Water, Heat, Light, Air, Soil, and Animals. Each is very brief; but they give the substance of present day knowledge, and a long list of works—principally German—dealing with them.

Under "Water" he describes the well-known structure of aquatic plants, and adds some interesting details of the structure of "drift fruits" with floating tissues.

Under "Heat," besides the extreme zero points, he notes that "The absolute extremes of plant-life are not identical with those of all its functions. Each function has its own extremes, and at a certain degree of temperature its optimum." This being the case, by only noting zero points, the results of Phenology are not always satisfactory; for differential variations of the functions are too much ignored. "The life of a plant is made up of thousands of separate actions, each of which is performed within its own ranges of temperature, and exhibits its own optimum temperature." The total would be the harmonic optimum.

Numerous figures illustrate adaptive structures of the tissues in accordance with each "Factor," and each chapter closes with a long bibliography.

In Part II. the Climatic and Edaphic (*i.e.*, influences of the soil) factors are described, giving rise to "formations," these being the general types of vegetation, characteristic of districts, due to these factors. There are three types—viz., Woodland, Grassland, and Desert, each of which is ably discussed.

He then considers "Guilds." These consist of lesser groups, such as Climbing plants, Epiphytes, Saprophytes and Parasites, as well as Insectivorous plants. In each case the correspondence between the external conditions of life and the structure of the plant is shown, thus suggesting that true epiphytes probably arose from accidental ones, which, having acquired the necessary characteristics, then became "fixed." Similarly with saprophytes, the transition from the green to a colourless condition is the result of adaptations to conditions of life. "The change in the mode of nutrition causes a change in the structure and ecology of the plant." That sentence may equally apply to every cause and every responsive change.

Part III., on "Zones and Regions," is divided into five sections—viz., the

Tropical, Temperate, Arctic, Mountain, and Aquatic zones or regions. Each of these sections contains from two to ten chapters, and treats of the subjects systematically and in detail. They show the effects of heat, water, light, &c., on growth in shade and in the open, including the protections adopted against desiccation.

The periodic phenomena in the functions of plants are described, in which there is no absolute rest, such occurring in only some functions. Then follows a full description of tropical districts, both those constantly moist and those constantly dry. Abundance of excellent photogravures from nature illustrate the effects of moisture and drought respectively. A similar treatment with illustrations applies to temperate and arctic regions, the effects of the climate being well shown in each case.

The peculiar characteristics of mountains having a rarified air, a rich amount of light, and various aqueous precipitations, have corresponding effects upon plants, these adapting their structures according to their requirements.

As stated, each chapter is very short, but the whole book pretty well covers the entire field of geographical botany, while the important lists of authors dealing with the various details of this vast subject are very valuable to students. Ecology is now a well recognised branch of botany, and this splendid work of Schimper's—whose death all botanists will deeply deplore—will form a substantial basis for all future workers in this field to build upon. *George Henslow.*

PLANT NOTES.

HELICHRYSUM ANGUSTIFOLIUM.

WE do not find this plant in *Nicholson*, nor do we remember to have seen it in gardens, on which account we think it may be well to call attention to it. Our specimen came from Mr. Cuthbertson, of Rothesay, and is a perennial plant, with wiry, erect branches 2 to 3 feet high, and covered with grey down; the leaves are linear, revolute at the margins, channelled above, with a prominent green midrib beneath. The yellow flower-heads are very numerous in terminal corymbs, each flower-head about $\frac{1}{4}$ -inch long, cylindric, with several rows of appressed oblong obtuse bracts, the inner ones linear, covered with small glands at the back, not visible except by the aid of a lens. It is a showy plant, suitable for the centre of the herbaceous border. It is a native of Southern Europe.

BROWALLIA ELATA MAJOR.

This plant is a very pretty addition to the cool-house at this season of the year and onwards. The flowers, of a charming blue colour, are much larger and more effective than those of *B. elata*, and are much appreciated either on the plants or when used as cut bloom. The plants may be raised from seeds or cuttings; the latter, if put in now, will make nice plants in 48-sized pots for flowering in the late autumn or early spring months. They should be given cool treatment, with a little fire-heat at night when the weather is cold. They are easily cultivated.

EXACUM AFFINE.

This pretty flowering annual deserves to be more extensively grown, if only on account of its very fragrant odour. For this reason it is most useful for the embellishment of the various flower-vases, &c., in the mansion or conservatory, being especially adaptable for small vases or jardinières, and as a frontage to groups of plants,

* By Dr. A. F. W. Schimper, translated by W. R. Fisher, B.A.; revised and edited by Percy Groom, M.A., D.Sc., F.L.S., and I. B. Balfour, M.A., M.D., F.R.S. (8vo, pp. 824, Index; with a photogravure portrait, five collotypes, four maps, and 497 other illustrations. Oxford, at the Clarendon Press).

&c. It is easily raised from seed sown in the spring or autumn. If sown in the autumn and grown on it will last a long time in good condition. *W. A. Cook, Shirley Park.*

ORCHID NOTES AND GLEANINGS.

FLOWERS FROM SOMERGHEM.

FROM the Marquis de Wavrin, Château de Ronsele, Belgium, come flowers of several remarkably fine Orchids, among which are—

Cattleya Loddigesii splendens.—A very handsome, brightly coloured flower, measuring nearly 6 inches across at its widest, the sepals and petals being each over an inch and a quarter wide. Sepals and petals bright purplish-rose. Lip white inside, pale lilac out. Disc and side lobes pale yellow, front lilac.

Cattleya Warscewiczii Sanderæ.—A larger flower than those borne on the plant for which Hamar Bass, Esq., secured a First-class Certificate at the Royal Horticultural Society, June 11, 1895, but with the same bright colouring and slight suggestion of *C. × Hardyana*. The flower is 8 inches across the petals, which are 2½ inches wide. Sepals and petals purplish-lilac; lip almost entirely glowing velvety purplish-crimson, with two small yellow patches on the side lobes, and some fine yellowish-red lines from the base.

Lælio-Cattleya ×.—A singular hybrid imported with *L.-C. × elegans* from Brazil, and suggesting a secondary cross between that variety and *L.-C. × Schilleriana*, which is generally found in the same locality. It is formed like *L.-C. × elegans*. Sepals and petals whitish, tinged with light purple, darkest on the reverse side. Lip white at the base; light rose-purple in front and on the tips of the side lobes.

Remarkable progress is made at Somerghem in the matter of raising hybrid Orchids, and in point of quick flowering the case of *Lælia × De Geestiana*, which was entered for the Holland House Show, but passed out of flower a day or two earlier, may be cited. It is the result of a cross made by M. De Geest, gr. to the Marquis de Wavrin, between *Lælia Jongheana* and *L. flava*, March 8, 1900. The seed was sown March 21, 1901, and the first flowers appeared June 21, 1904, being the first hybrid with *L. Jongheana* as the seed-bearer to appear, and that too in a very short time. It was shown at Ghent and accorded a First-class Certificate, and described as bearing four flowers on a spike, each about 3 inches across, white, with a much frilled labellum with rich orange centre.

NEW OR NOTEWORTHY PLANTS.

PINUS NELSONI.*

THIS Pine was collected by Mr. E. W. Nelson, of the United States Biological Survey, in June,

* *P. Nelsoni*, n. sp.—Branchlets very slender, conspicuously glaucous, becoming ashy-grey. Leaves 2½ inches long, in threes, their margins serrated and their ventral surfaces, in this specimen, cemented together, so that the fascicles appear to be monophyllous: basal sheaths persistent, stomata on all surfaces, fibro-vascular bundles single, hypoderm cells large, mostly one row deep (here and there two rows) and enclosing the marginal resin ducts, which are often wanting; strengthening cells also above and below the fibro-vascular bundles. Cones subterminal, symmetrical, about 2½ inches long, nearly cylindrical, and borne on very long, stout, curved foot-stalks. Apophyses approximately rhomboidal, the transverse diameter considerably the longer. Umbos dorsal, their bases very broad transversely but longitudinally compressed, forming very conspicuous, more or less reflexed, nearly triangular protuberances all over the surface of the cone. Seeds large and wingless. Nelson! No. 4501. *Nat. Mus., Washington.*

1898, on a mountain above Miquihuana, near the border line between the States of Tamaulipas and Nuevo Leon, in North-eastern Mexico. It is the lowermost of the Pines on this slope.

Pseudo-monophyllous fascicles are not uncommon among Pines as varietal forms. Mayr mentions such varieties of *P. Thunbergii* and *P. densiflora*; *P. sylvestris monophylla* is a well-known form of the Scotch Pine, and there is a rarer similar variety of *P. strobus*. More material must be obtained before the true significance of this character for this species is understood.

In nearly all Pines a mechanical tissue is developed which forms an interior hard dorsal plate on the cone-scales. The cells of this tissue have thick walls, are hygroscopic, and act, under dry and wet conditions, to open and close the cones. In such species as *P. Cembra* and *P. albicaulis*

EARLY AUTUMNAL FLOWERS.

NOTHING in Nature is more silent and unobtrusive than the floral transition of one season into another throughout the whole course of the ever-varying year. Perhaps the gradual development of summer into autumn is the least noticeable of all; yet, to the experienced and impressionable cultivator, the latter season, even on what may be termed the confines of activity, has its own characteristics. There is for example, a perceptibly cooler atmosphere, more adapted than that of its warmer and more rapidly forcing predecessor, for preserving the perfect form and prolonging the life of our loveliest flowers. Sweet Peas, it is manifest, do not endure with equanimity a burning heat; they are never more impressive than in August

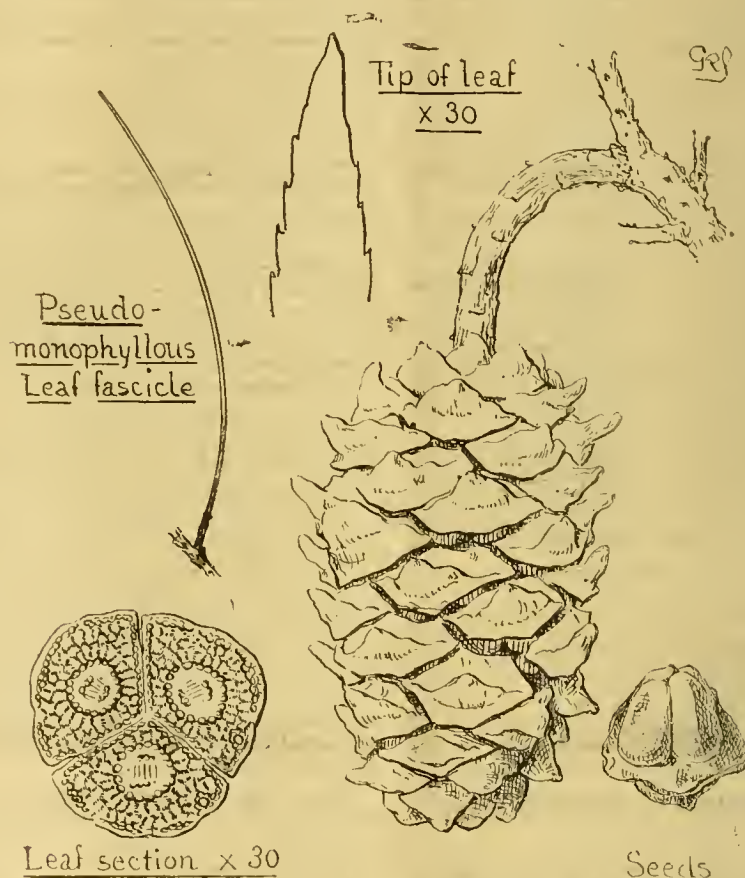


FIG. 49.—PINUS NELSONI.

this tissue is wanting; in fact, the presence or absence of this dorsal plate is a convenient character for distinguishing the cones of *P. flexilis* from those of *P. albicaulis*. Our Pine in this particular corresponds with *P. albicaulis*, and has no dorsal plate on the cone-scales. Such cones do not spring open, but shrink in drying sufficiently to partly uncover their seeds. If the seeds escape the crow and the squirrel, their spontaneous release must depend on the disintegration of the cone. Concurrently with the absence of the stereome tissue, the wood strands, which form the skeleton of the scales, are exceptionally weak in this type of cone, as if, indeed, special provision were made for their early decay.

The structure of the cone, its extraordinary peduncle, the unexampled persistency of the basal sheath in a Pine of such affiliations, all combine to establish *P. Nelsoni* as a new and very curious species. *George Russell Shaw.*

and September, when they have coolness and moisture, and the clear and pure atmosphere which they love so well. Roses, no doubt, are less numerous than they were in July; but I always imagine that their formation is finer, because their central petals are not so much exposed to the burning beams of the merciless sun; their exquisite colour also is retained much longer. Many of the varieties which are chiefly valuable for garden cultivation are for the second time in fragrant bloom; supreme among those splendid autumnal treasures being such splendid hybrid Teas as Viscountess Folkestone, by no means exhausted by its marvellously luxuriant summer floriferousness; the magnificent Caroline Testout, not seldom fully 6 inches across, a giant among Roses, by many rosarians regarded as a derivative from *La France*; Clara Watson, a glorious Rose, whose artistic capabilities, especially as a climber, have never yet been adequately recognised; Lady Mary Fitzwilliam, White Lady,

Papa Gontier, and Madame Pernet Ducher, all of which have proved themselves "perpetual" acquisitions.

Several of the most effective Hybrid Perpetuals, such as the velvety-crimson Duke of Edinburgh, Horace Vernet, Duke of Wellington, and Charles Lefebvre, flower somewhat too late in summer to afford the privilege of producing autumnal flowers; but on the other hand we

of which the variety last-mentioned has, like certain Tea Roses, a pendulous habit, which more than half conceals its richly-coloured blooms. Such varieties of recent origination as Alice Lindsell and Mildred Grant, however imposing their individual flowers, are by reason of their extremely moderate growth and susceptibility to atmospheric influences, to be regarded as essentially "exhibition" productions. They grow

achieved this year, and quite as much may be asserted of *Tropæolum peregrinum* (which is especially beautiful when grown upwards through the branches of *Prunus Pissardi*), and that glorious Peruvian climber, the great *Nasturtium*.

The Sweet Peas are also magnificently ornamental, while the snow-white purity of the fair Madonna Lily, shining everywhere through the garden, instinctively recalls to our remembrance those immortal words:—"Even Solomon in all his glory was not arrayed like one of these." David R. Williamson.

FORSYTHIA EUROPÆA.

IN the *Gardeners' Chronicle* of January 16, under the heading of "Trees and Shrubs," you call attention to *Forsythia europæa*, saying that it had been in the Berlin Botanic Garden for several years, but that it had not as yet bloomed. We post you a photograph of a branch in bloom cut from one of the plants in our nursery, which is without doubt the first plant of its variety to bloom in America. So far, we have only heard of its existence in one or two places. We, in common with others, did not know of the existence of an European species until a recent period, and wonder how it could have escaped the attention of botanists so long.

The late Mr. Thompson, of Ipswich, offered seeds of it four years ago, from which our plants were produced, and he only offered the seeds one season. This shrub is a good compact grower, of an upright habit, with no procumbent or drooping branches. Its flowers are about the same size as those of *Forsythia suspensa*, but are of a lighter shade of sulphur-yellow colour, the flower-stems are shorter or the flowers nearly sessile; and we should think when the plants attain age they would become very attractive. In foliage it is similar to *F. suspensa*; but the habit, as stated above, is very distinct from that variety.

Forsythia suspensa is the finest early-blooming shrub we possess here, forming when in bloom glorious drooping bushes of deep golden-yellow, which are very showy, and most attractive. John Charlton & Sons, Rochester, N.Y., U.S.A.

EXPERIMENTAL CULTIVATION.

(Continued from p. 52.)

RECORDING RESULTS.—The record of the results of experiments as far as they can be determined by observations in growth, &c., or by weighing the total produce, requires most careful treatment, and the method to be adopted should be well considered beforehand. With a large proportion of field and garden crops the weight of the whole plant and that of its root, stem, leaf, fruit, or seed (according to the part which it is the special object of the cultivator to obtain) is the chief point to be recorded, and this is secured when the crop reaches the stage at which it can be harvested for immediate use or storing. But in most cases the quality of the produce must also be ascertained before an adequate idea can be gained of whether any experimental treatment has been successful or the reverse. In some instances this can be readily accomplished by grading the produce and affixing a money-value at the average current market rates—a rather arbitrary matter, perhaps, and one which might show very different results from the same treatment in different years. Where the use of various manures is concerned, and the value of both crops and applications would have to be stated, this plan has been opposed with good reasons.

Dr. J. A. Voelcker has stated his opinion as follows in special reference to farm crops, though it also applies to many garden crops: "The value of the results consists in the actual crop yields produced by the different manurings; these



FIG. 50.—FORSYTHIA EUROPÆA IN FLOWER AND FRUIT:
FLOWERS YELLOW.

have this consolation—that if they have only one season of flowering, it is greatly prolonged. Exceptionally valuable for their "perpetuality," if such a term indeed be admissible under any conditions, are Captain Hayward, Clio, Mr. Cranston's Crimson Bedder, and Margaret Dickson; while as much may be affirmed of many of the finest Noisettes and Teas; Bouquet d'Or, William Allen Richardson, and Mme. Pierre Cochet being prominent among these. Of the new Roses the grandest alike in growth and productiveness have been Frau Karl Druschki, Florence Pemberton, Corona, Ard's Pillar, and Field Marshal,

as a rule, about 1½ feet high, produce two stout, short stems, and an equal number of gigantic blooms from 5 to 7 inches across; we sadly require more Roses now-a-days of the type of Viscountess Folkestone, La France, or Margaret Dickson.

This is the favourite season for climbing flowers, which generate most beautiful and memorable effects during what may be termed the intermediate season of the regal Rose. Seldom has the radiant *Tropæolum speciosum*, which occasionally flowers in my garden to a height of 15 feet, created grander pictures than it has

stand on record, and are always capable of being compared the one with the other, whatever the price of grain or of the manures used may be. In fact, the yield is the only unvarying factor in such a computation, for by the mere alteration in price of one manure or the other, or of the grain, a result may be made to be remunerative which before would have resulted in loss, or *vice versa*." Grading and the expression of the results as first, second, or third qualities can, however, be done without giving money values; in fact, unless some such plan be followed, misleading records frequently result. It is possible to have a crop which exceeds in weight that of another of the same kind, and yet the former may contain so large a proportion of low-grade produce as to be of much less value to the growers. Experimental work should be designed to improve cultivation and benefit all concerned, and the final test of this must be the financial results either in the reduction of expenses, the increase of crops, or the improvement of quality.

MONEY VALUATION.

The principal difficulty in connection with grading without money valuation is that the standards may vary from year to year, and according to the varieties grown. The third grade of one variety or of one season may be equal to the second grade of another, and this is especially the case with fruit and vegetable crops. The money value, it is true, will also vary greatly in seasons of scarcity and plenty, but taken in conjunction with the proportions of the grades, and the total weight, more trustworthy conclusions can be secured as to the effects of the different experiments than when weight alone is taken.

When the investigation is directed to ascertain the effects of certain treatment upon stem or leaf growth, additional methods of recording results will have to be tried. The measurement of leaves, stems, and branches will become necessary wherever weighing does not afford a sufficiently comprehensive gauge of the progress. For measuring leaves an ingenious little instrument has been employed by scientists engaged upon very elaborate work, and Dr. Horace Brown, F.R.S. (who has conducted so many important experiments on the absorption of carbon dioxide and the formation of starch by leaves) speaks highly of its utility and accuracy. Extensive work in leaf-measurement has been carried out at the Woburn Experimental Fruit Farm, and as the result of some thousands of observations on the three varieties of Apples, Bramley's Seedling, Cox's Orange, and Pott's Seedling, the area of individual leaves was determined to be practically equal to three-fourths of the length multiplied by the breadth. Mr. Spencer Pickering, F.R.S., stated on p. 60 of the first report (1897), that the "constants obtained with Bramley, Cox, and Potts, were 0.733, 0.765, and 0.752 respectively, these being ascertained by cutting out facsimiles of the leaves in a sheet of paper, weighing them and comparing their weights with those of a measured area of the paper." It is obvious that in any such system the paper should be of even substance throughout, and the weighing must be done with sensitive balances, and by a hand trained to delicate work of the greatest accuracy.

MEASURING OF TOTAL WEIGHT.

With many plants, as with those in pots, the measuring of the total weight with the length and number of branches may be requisite, besides ascertaining the number and area of the leaves. For small trees, the stem girth and height with the spread of the branches may be requisite, while possibly in some instances the number of flowers produced will need to be recorded. The effects of treatment upon the time of growth

starting and the maturing of produce must be observed, also the liability to or the immunity from attacks of insects and diseases should be noted. In short, the keenest continual observation is essential throughout the period of development of all plants under experimental culture, as frequently a matter which may appear of small consequence at the time will throw light

enced and skilful chemist there is abundant work in the determination of ultimate results, where every means at the immediate command of the horticulturist or agriculturist has been exhausted.

CHANGES IN WEATHER.

A record of weather changes ought to be kept wherever outdoor experiments are conducted; and though a complete set of instruments is not needful, and full meteorological observations cannot be expected for every separate set of experiments in the same district, all stations of a permanent character should be well supplied in this respect. The essential facts required are the maximum and minimum temperatures, the rainfall, the direction of the wind, and the general character of the weather, especially with regard to sunshine, cloudiness, and the moisture present in the air. To rank as a meteorological station two series of observations each day are requisite, but for practical purposes this is not essential. The lowest temperature during the night 3 or 4 feet above the ground and on the surface, and the highest during the day, will give the extremes, with which we are most concerned. The duration of these extremes, which is another matter of importance, cannot be determined if two observations are taken. Where the establishment is of sufficient importance a sunshine recorder is a valuable instrument, but the best forms are expensive and demand much care. Registering thermometers in various excellent forms are obtainable, and if the observations are taken at 9 A.M. each day we then obtain the lowest reading for the past night and the highest for the preceding day, these constituting the really essential points. A general watchfulness should be exercised, so that sudden changes, violent storms, &c., may be recorded, as when plants are in the first vigour of growth with immature foliage considerable harm may often result from transient occurrences; and this especially applies to the time of flowering for seed and fruit-bearing plants. What is required, in fact, is as complete a history as possible of the plants' progress from the commencement of growth until harvesting time, with a record of all the circumstances during that period likely to assist or to nullify the treatment accorded. Puzzling or seemingly negative results may frequently admit of some explanation when the whole of the facts are collected.

BOOKS FOR CONTAINING RECORDS.

The record books to be employed must be ruled up or printed in the form best adapted for the particular crops to be dealt with, and few general directions can be given that will be of service. Still, it is advantageous, if the same experiment is repeated for several years with the same crop, to have the succeeding season's records together in one book, so that they may be compared with the least possible trouble. It is found as observations accumulate that a good deal of labour is lost unless a carefully-devised system of booking is followed from the beginning. Another point is that small books are unsuitable for extensive or prolonged work, as all the essential matters bearing upon each crop should be recorded with every season's results, and they are then available for reference at any time. It is desirable also that the books should be kept in two sets—one in which the observer enters all his notes direct, and the other to which they are transferred and classified for preservation. When the crops are of such a nature that they cannot be dealt with immediately they are gathered or harvested, and they have to be stored, the produce from each plot must be accurately and securely labelled with some material which is not likely to be destroyed or rendered illegible, metallic numbers being as convenient as anything. If only a short period is to elapse between

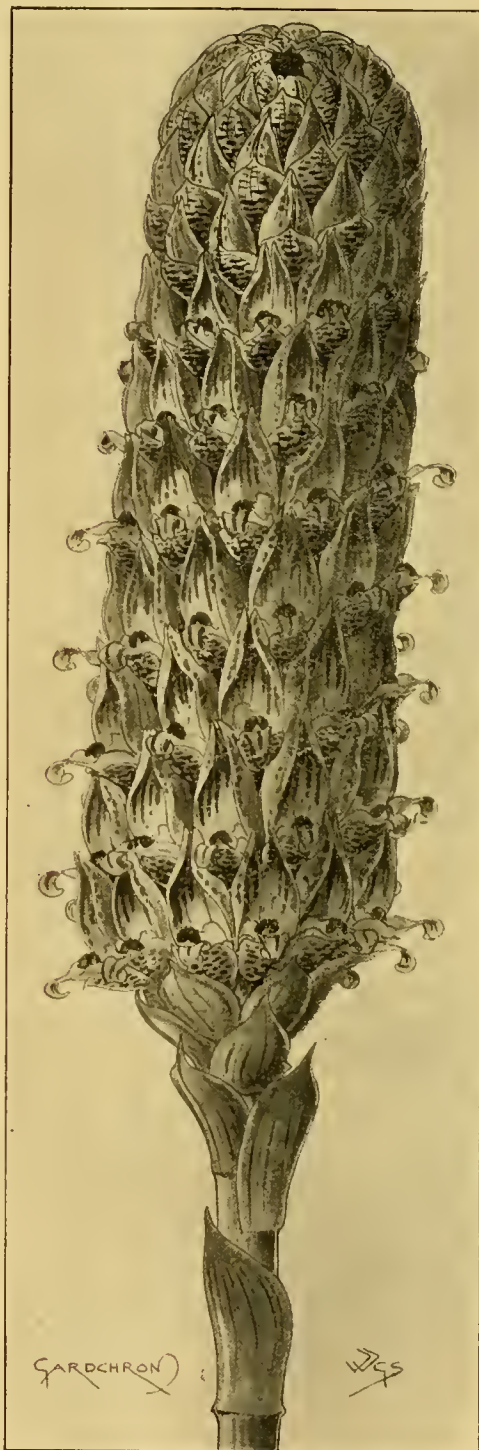


FIG. 51.—*BULDOPHYLLUM HAMELINII*.
Flowers lilac-purple. (See August 13, p. 118.)

upon subsequent results that might be otherwise inexplicable.

The actual variation in the constituents, or the food-value of produce, is a further matter of importance which will have to be decided by chemical analysis. But this does not come within the scope of these notes, which are intended to deal only with such work as a trained cultivator should be capable of performing. For an experi-

the gathering and the recording, it is helpful to have books of perforated tickets, so that the name, plot, date, &c., can be entered on one portion that is affixed to the produce, the counter-foil to be retained for comparison or as a check if necessary.

THE "NET" WEIGHT IS NECESSARY.

One source of error needs to be carefully guarded against where the crop or produce to be recorded cannot be placed directly in the scales, and it has to be weighed in a vessel of some kind, and that is to make sure that the necessary deduction is always made to obtain the net weight. The best way I have found to ensure this is to enter the gross weight and make the deduction afterwards right through the series of observations. The figures are then available for checking and correction, but if the weight of the vessel is subtracted each time and the net weight only entered, any mistake that is passed cannot be corrected afterwards. Again, if the English system of weights is followed, it is preferable to take the first observations in pounds.

mainly upon commercial lines. It is seldom that the search for knowledge and the information required for its best utilisation can be combined in one scheme. In the effort to extend knowledge or improve practice in cultivation, much will often have to be done that is not merely unprofitable, but is a source of material loss. A large part of the enormous work of observation, recording, labelling, and preserving accuracy in all the details, is quite outside the routine of cultivation, and represents a heavy item in the expenses, both directly and indirectly. Economy in labour can seldom be carried out with satisfaction. *R. Lewis Castle.*

(To be continued.)

A JAPANESE THANK-OFFERING.

At harvest festivals and similar occasions for thankfulness, we are wont to decorate our churches with flowers and fruits. It is interesting to see that the Japanese testify their gratitude in a similar way. The illustration (fig. 52), which we copy from the *Journal de la Société*

Apples set a huge crop, but the effects of the dry weather thinned them largely, and fruits are still falling, but quite sufficient will be left. Currants and Raspberries are rather small, and require moisture badly. Gooseberries are excellent. Damsons are an average crop. Plums in some cases are very good, in others the fruits failed to stone. Our soil is heavy, but well drained. *J. C. Tallack, Shipley Hall Gardens, Derby.*

DERBYSHIRE.—The fruit crops generally are good, with the exception of Red Currants. Our soil is a strong loam for the most part, resting on clay. *T. Keetley, Darley Abbey, Derby.*

— The enormous crop of all kinds of fruit, both inside and out, is a pretty general surprise after the wet, cold, and sunless season of 1903. I think the present results will upset the prevailing theory that a bright sunny summer is necessary to ripen the young growth and mature the buds for the benefit of the succeeding season. Last spring was free from the usual late frosts that have so many times completely destroyed the fruit crops. *J. H. Goodacre, Elvaston Castle Gardens, Derby.*

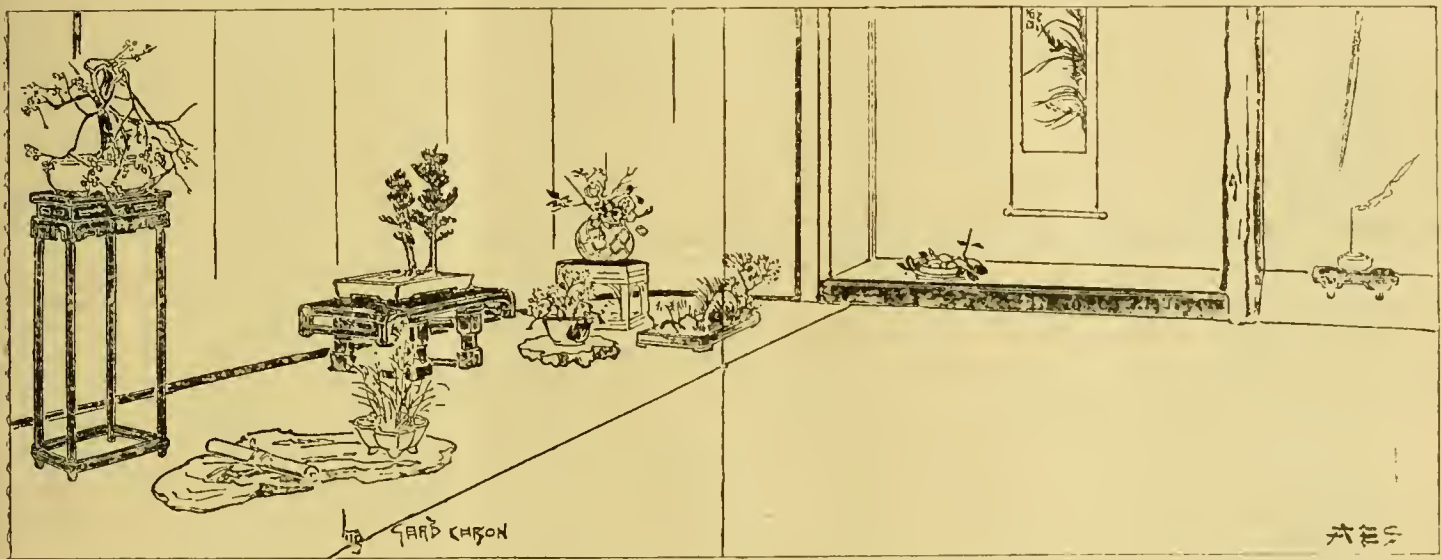


FIG. 52. GROUP OF DWARF TREES ARRANGED BY THE JAPANESE AS A THANK-OFFERING FOR ONE OF THEIR RECENT VICTORIES.

and convert them subsequently (if desirable) into tons, hundredweights, and quarters. Similarly with the metrical system, if the weighing is in kilos and grams, the result should be set out in full as—

kilos grams
4 674;

but when there is anything below 100 grams the nought must be always prefixed (as 4.074), or considerable errors may creep in. This is the greatest danger in the use of the metrical system, and demands most careful attention, especially when there is a pressure of work and time is short.

EXPENSES OF EXPERIMENTAL WORK.

The expenses of experimental work are so much greater than these necessitated by ordinary cultivation, that due consideration must be given to this aspect before commencing any scheme. The subject cannot be entered upon fully here, but it is necessary to point out the possible danger of forming too low an estimate at starting, as that invariably leads to after disappointment and probably the ultimate discontinuance of at least a portion of the work. Under some very favourable and exceptional circumstances it may be possible to render experimental cultivation a profitable undertaking. But in such cases it must be founded upon a commercial basis, and conducted

d'Horticulture du Japon, shows one use that is made of these curious dwarf trees in which the Japanese take so much pride. At least they represent years of labour and care, and in that sense are fitting symbols of the gratitude the Japanese experience at their successful prosecution of the war. The group in question was arranged as a thank-offering for one of their recent successes. Now that their island home is secure from danger of invasion, the victorious Japanese will have cause for yet deeper thankfulness.

REMARKS ON THE CONDITION OF THE FRUIT CROPS AT THE END OF JULY.

(See Tables and General Summary, ante, pp. 70-76.)

(Continued from p. 109.)

CHESHIRE.—The fruit crops in general are good here, but all are very much in need of rain. Red, White, and Black Currants are dropping their leaves through the blight. Strawberries are plentiful and good. Raspberries are a fair crop. Gooseberries are also plentiful. *W. Chester, Chatsworth Gardens, Chesterfield.*

DERBYSHIRE.—Pears set a very heavy crop, but many of the fruits have dropped, and in some cases the Pear-trees are quite bare of fruit.

HERTFORDSHIRE.—The soil here is chiefly a very strong loam, resting on clay. Apples set very freely, necessitating thinning. Pears flowered very freely, but did not set well. Plums both flowered and set fairly well. Cherries also flowered very freely, but the fruit dropped badly at the stoning period. Peaches and Nectarines are both heavy crops, and liberal thinning was necessary. Small fruits are the heaviest and best crops for the past five years. *C. R. Fielder, North Mymms Park, Hatfield.*

— I have much pleasure in stating that the fruit crops in this district are quite up to the average. Cherries and Apricots are a little under a full crop, but taking the fruit crops generally they are most satisfactory. Our soil is a yellow sandy loam, clayey in places, which we find well suited for growing Strawberries, Melons, and Roses. *C. E. Martin, The Hoo Gardens, near Welwyn.*

— The fruit crops generally are not nearly so satisfactory as they promised to be early in the season. Most trees flowered abundantly, and the setting of fruit was good, but much, especially the stone fruit, failed to swell. Both dessert and Merello Cherries are bad, the latter with us being practically a failure. Most kinds of Plums are excellent, but the larger varieties of Damsons are

very scarce. Strawberries and bush fruits were never better, except Black Currants, which are badly infested with mite. The soil here is a stiff retentive clay. *Edwin Beckett, Aldenham House Gardens, Elstree.*

LEICESTERSHIRE.—The soil here is a medium strong loam, with a clay subsoil, consequently fruit trees makes robust and late growth. The crops are the best we have had for some years. Pears thinned themselves to an average crop. Apples are falling, but there are more than enough left—in fact they will require more thinning. For the first time in three years we have a full crop of Black Currants, but unfortunately they have suffered from blight and aphid. The Strawberries have been abundant, but owing to the drought they will soon be over. *Louis Gauthier* has been remarkable for its prolific crop. Raspberries, Gooseberries, and Red Currants are full crops. Stone fruits have been rather disappointing on account of many of the fruits falling in the early stages of growth. *Daniel Roberts, The Gardens, Prestwold, Loughborough.*

— This is the best fruit season for crops of all kinds which we have had here for many years. The partial failure of Plums on standard trees is quite unexpected, as flowers were abundant and healthy, and we had neither frost nor cold north-east winds this year during the flowering period. Small fruits are abundant, and are ripening in excellent condition. Strawberries have given a heavy crop, with fruit sound and of good flavour, the dry weather allowing them to ripen without decaying. Pears are not such a heavy crop as I expected, and the Pear-midge (*Diplosis pyrivora*) has caused much havoc among some varieties. A few of the Apple-trees have failed to set their fruit, owing chiefly to the excessive wet of last autumn. *Bess Pool* (the latest variety to commence growth) is a notable instance of this influence. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NORTHAMPTONSHIRE.—Apples are suffering from the effects of the drought, and the fruit will be very small if no rain comes to swell them. Our soil here is ironstone near the rock. *H. Turner, Fineshade Abbey Gardens, Stamford.*

— Crops of Apples, Pears, and Plums are good. Strawberries on young plantations have been splendid, but the dry weather has curtailed the crop considerably on three-year-old plantations. Raspberries are plentiful, also other small fruits, but all are needing rain. The soil is a stiff clay, and with the wet spring, followed by continued hot weather, it is now very hard and dry. *J. Shennan, The Gardens, Holdenby House, Northampton.*

NOTTINGHAMSHIRE.—On the light gravelly soils in this locality many Apples and Pears have dropped through the dry condition of the weather. *Amos Parr, Holme Pierrepont Hall, Nottingham.*

— The fruit crop generally is very good here this season, and the trees are clean and free from blight. There are grand crops of Apples on the large orchard trees, bushes, and pyramids; these have been all heavily mulched, and the fruit is swelling well. Black Currants are a fine crop, and this I attribute to good mulchings. Raspberries and Gooseberries are both plentiful and good. Strawberries carried very heavy crops—*Royal Sovereign, Waterloo, and Louis Gauthier* being all extra fine. *J. Roberts, Welbeck Gardens, Worksop.*

— Fruit-trees in this district passed the flowering period entirely uninjured by frost, and there was promise of the heaviest crop in recent years. Cold winds in May and June, however, made green-fly very prevalent, and now the drought is causing young fruit to drop in numbers. Prompt rain to swell what remains

would still give us a good all-round crop, but the prospect of a record year is gone. The soil here is keuper clay with alluvial drift in the Trent valley. *R. J. Pearson & Sons, Chilwell Nurseries, Lowdham, Notts.*

NOTTINGHAMSHIRE.—Abundance of all kinds of fruit prevails, with the exception of Plums, which suffered from frost and cold winds. The soil here is light and sandy, and everything is suffering at the present moment from want of rain, the rainfall here since April having been exceedingly light. *A. W. Culloch, Estate Office, Newstead Abbey, Nottingham.*

OXFORDSHIRE.—The Apple crop is heavy, and promises well. Strawberries were a very heavy crop, and produced splendid fruits. Raspberries and Currants are good. Plums are scarce, as are also Apricots. The soil in these gardens is a light sandy loam on gravel and chalk. Fruit-trees here grow remarkably clean and healthy without exception; but the soil here gets very dry during the months of July and August, which is very trying to newly-planted fruit-trees, &c. *John A. Hall, The Gardens, Shiplake Court, Henley-on-Thames.*

— Our soil here is, on the whole, very poor and stony, the subsoil consisting of either gravel or chalk. Trees of all kinds bloomed well with us, except Pears, and although the weather was fairly good at the time of blossoming, much of the fruit on the Apple-trees did not set; the reason of this may be due to the green state of the wood last autumn, when fruit-buds could not have matured properly. The cold winds spoiled some of the Apricot bloom. The Gooseberry grubs have been very troublesome. *A. J. Long, Wyfold Court Gardens, Reading.*

SHROPSHIRE.—Apples are a remarkable crop here. I have taken 90 per cent. of the fruit off most trees and have still left too many on. Pears are a full crop and the fruit is in good condition, but, like most other fruits, they require rain badly. Plums and Damsons are sadly in need of rain; the latter are casting a lot of their leaves. Small fruits are abundant, especially Black Currants and Strawberries, also Raspberries. This seems with us the best year as regards fruit since 1893. *A. S. Kemp, Broadway, Shifnal.*

(To be continued.)

NURSERY NOTES.

MESSRS. ED. WEBB & SON.

MANY of the leading seedsmen are fortunate in possessing ground for their "trials" on the side of one or other of the great railway lines, and they are therefore seen by many thousands of persons as they travel through the country. Not so Messrs. Ed. Webb & Son. Their trial grounds are at Kinver in Staffordshire, a remote village which is nearly four miles from the nearest railway station, and nearly five miles from Stourbridge. It is true that in late years the provision of a light railway from Stourbridge to Kinver has made the place rather less inaccessible than previously, but of the thousands who travel thereby, few, if any, are interested in such specialised gardening as seedsmen are bound to practise in order to maintain their stocks true, and to obtain new varieties of superior quality. Notwithstanding these circumstances, however, Messrs. Webb carry out a series of trials, the results of which are just as important as they would be if practised under the constant observation of the travelling public, and in a locality less removed from the beaten track. The firm has a first-class reputation for agricultural seeds, and trials in this department are just as necessary as they are in the horticultural department. These are also made at Kinver, and as there are 1,200 acres of freehold land, there is no difficulty in

providing for them all, and in growing besides crops of seeds of particular specialities, such as their "Chevalier" Barley, "Emperor" Cabbage, &c.

We were shown a new variety of Barley, a selection from "Chevalier," which will be distributed under the name of "Binder." In a measure it possesses the qualities of Chevalier and Burton Malting, and is especially recommended because of its unusually upright character of growth, which will make it convenient for mowing and binding by the mechanical cutter. Messrs. Webb are fully aware that farmers are only able to make grain crops remunerative at all by adding to the value of the grain that of the straw also, and they believe that in the "Binder" Barley and a new white Oat they will distribute next season, cultivators will find the straw to be of greater value than usual, the Oat especially possessing straw of exceptional length and strength. There are upwards of fifty trials of Wheat, eighty of Oats, nearly forty of Barley, forty of Cabbage, nearly fifty of Beans, sixty of Onions, sixty of Cauliflowers and Broccoli, forty of Carrots, forty of Turnips and Swedes, and fifty of Mangolds.

The Peas include upwards of 150 varieties, amongst which are several unnamed seedlings. The soil being of a very light character, many of the crops have felt the effects of drought severely and the Peas amongst them. Most of the varieties were quite past bearing, but the exceptions are well worth remark, because they were sown on the same date in April, yet were yielding excellent Peas for table use on August 8. The varieties Mainstay and Masterpiece were about the same height, 3 feet. Each had good pods of commendable shape, and containing nine or ten large Peas in each pod. Mainstay is nearly a week earlier than Masterpiece, but both appear to be well worth growing. Another variety yielding good Peas was an unnamed seedling, growing 2 feet high. It will probably be distributed next season, and is likely to become of considerable value. "Kaiser" is a new late-fruited main-crop variety, apparently of excellent merit, but past yielding at the time. Another good main-crop Pea is Astronomer. It has dark green pods, but rather pale-coloured Peas, and there are ten large Peas in each pod. Senator and Promotion had both ripened their pods, but were recommended as good maincrop varieties.

Wordsley Wonder is a first-class second early Pea that is well known and generally appreciated. It grows 3 feet high, and though the pods are not of large size they are so packed with Peas that the yield is very heavy, and the Peas have extra good flavour. During the dry weather black-fly has been very troublesome upon some plants. The Broad Beans have been quite spoiled by this pest, and from these Beans it has spread to the Scarlet Runners, and to some Mangolds now seeding, which is specially unfortunate, as the selection of Mangolds is of the choicest possible.

There are many trials of annual flowering plants, and some of these were producing very gay effects, whilst others were less successful owing to the drought. Among these latter were some of the Stocks, and all the varieties of Chinese Asters. But the Nasturtiums presented a blaze of colour, and among them the varieties Golden King (yellow) and King of Tom Thumbs (scarlet) were most effective. Meteor, rich crimson, of the same type, may be preferred by some, but is less bright. Clarkias were capital, and were flowering abundantly in batches all true to colour, of which there is much variety. Single and double-flowered varieties were alike alive with bees, who evidently gather considerable honey from them. Godetias were in equally good condition, and a variety named "The Bride," white, and another one with double rose-coloured flowers, were as even in growth as

possible, and perfectly true. Of Candytufts we were specially impressed with "Snowflake," a very fine variety, and "Midget," only 3 inches high, excellent for edgings or for the alpine garden. *Lupinus albus coccineus nanus*, a pretty Lupine, about 1 foot high, with white and pink-coloured flowers, would probably be appreciated by some even who have little admiration for the taller-growing Lupines of other colours. The Carnations were hurried past flowering by the hot sunshine, but there is a large breadth of plants, also of herbaceous or perennial Phloxes, Sweet Peas, Mignonette, and other flowering species, of which space will not allow us to write in detail. But we must mention a new Stock named *Admiration*, with large white and pink-coloured flowers, which is said to be useful as a "Ten-week-Stock," or may be sown in July. The branching habit of the plants, and their free-flowering, was remarkable, the dry weather notwithstanding.

bloom. Our illustration (fig. 53), for which we are indebted to Mr. DOPSON, shows a group of *Yucca recurva* in Kennington Park. It is interesting not only for its appearance, but also as a proof of the value of these plants for town squares and similar confined situations. Many of us can still remember Kennington Park as it was half a century ago—a desolate waste. Things are different now.

BALMORAL.

VISITORS who have had the privilege this summer of visiting the grounds of Balmoral Castle have much to see and admire, but one new feature has arrested universal attention. In the curve formed by a belt of deciduous trees on rising ground on the east side of the lawn from the main entrance drive, a magnificent border of hardy herbaceous plants has been laid out. To

alba, *Eryngium amethystinum*, *Erigeron speciosus superbum*, *Centranthus ruber*, *Veronica spicata alba*, *Chrysanthemum maximum*, *Pyrethrum uliginosum*, *Spiraea palmata*, *Campanulas* of sorts, *Chelone barbata*, *Sidalea Listeri*, *Liatris spicata*, *Monarda didyma*, *Achillea ptarmica fl. pl.*, *Scabiosa caucasica*, and many newer sorts too numerous to mention.

Several fine clumps of Golden Rod, Monkshood, and Michaelmas Daisies, autumn Anemones, Perennial Sunflowers, &c., were only in bud, and rich and effective as the border already is, it will be much more so by the end of August, for the 900 feet altitude of Balmoral is not conducive to early flowering. To be planted so lately as April, and in such a dry summer, it shows very careful cultivation and management to have effected such a happy result in the short period of three months. J. L.



FIG. 53.—YUCCA RECURVA IN KENNINGTON PARK.

A great breadth of ground had just been sown with seeds of the celebrated Emperor Cabbage. About 2 acres are seeded each season, and nearly 1 ton of seed obtained if the weather is good. Some of the warehouses at Wordsley are now being filled with wool, and the "hands" are picking and sorting it. Messrs Webb have many departments in their business. Immediately after the wool has been handled, the Hops will need attention, for the firm deals largely in this crop. They have also a large manure manufactory at Saltney, near Chester.

YUCCAS.

THE present season seems to have been remarkable for the flowering of Yuccas. From many quarters we have received information of the blossoming of these noble plants, especially *Y. gloriosa* and *Y. recurva*. The pathway in an ordinary front garden of a suburban residence in the western suburbs is just now remarkable for a double line of Yuccas in full

brighten the somewhat sombre colours of Pines, Birches, &c., forming the background of the border, large clumps of various-coloured shrubs, including Purple Plum, Golden Elder, &c., have been introduced into the edge of the belt with great effect, relieving the plainer green of tree foliage, and bringing into bold relief the rich masses of bloom in front. In laying out the border, old-fashioned ideas as to herbaceous planting have been completely set aside, and the bolder and grander method of planting in masses has been carried out. Great care and skill have been displayed in the selection of varieties and in the harmonious blending of colour, and the effect even now, when many of the varieties are not in bloom, is very charming.

With an ideal background and amid a scene of great sylvan beauty many old favourites are specially noticeable, amongst whom may be mentioned *Lychnis Chalcedonica*, *Lythrum roseum superbum*, *Bocconia japonica*, *Galega officinalis*

KEW NOTES.

GLORIOSA.—A new and beautiful species of *Gloriosa* has been lately flowering in the stove. It is a really handsome kind, worthy of ranking along with the recently introduced *G. Rothschildiana*, which many are now familiar with. It is remarkable that two such fine species should be added to this limited genus at comparatively the same time, after the great number of years that *G. superba* has held its own, almost unchanged, as the garden plant of the genus.

Specimens of the plant now under notice were collected by Mr. A. Carson, B.Sc., of the London Missionary Society, and were sent by him to Kew amongst many other dried specimens. He collected the *Gloriosa* at a place called Fwambo, situated about 50 miles south of Lake Tanganyika. Mr. Baker named it *G. Carsoni*, in honour of the collector. A botanical description is given in the *Kew Bulletin* of 1895, p. 74, in which Mr. Baker says: "A very distinct novelty, with flowers like

those of the finest forms of *G. virescens*, Lindl. . . it would make a handsome garden plant." The tuber of the specimen now in flower was sent to Kew last year by Mr. Phillpot, this being the first introduction to the Royal Gardens of a living specimen. The tuber was rather small, but has produced a growth 8 feet in length, the habit of which is very similar to that of *G. superba*; the flower has a diameter of 4 inches; the segments are 3½ inches long and three-quarters of an inch wide at the broadest part; the colour is a bright brownish-red, turning a deep dull red with age. The segments have a margin of golden-yellow, and near the base are entirely of this colour; the margin is only slightly undulated; the filaments and style are green, anthers yellow. Possibly the fine colours and good forms of these recently-introduced species may be the means of producing some pretty hybrids, that will make this genus more popular than it is at the present time.

GLORIOSA VIRESCENS VAR. *GRANDIFLORA*, Baker.

This pretty variety has also been in flower in the stove. The flowers are much larger than in the type, the colour being a clear, pale yellow. It is certainly a very beautiful *Gloriosa*, though it has no claim to newness, for it was discovered by Mr. Gustav Mann at Fernando Po in 1860, and was figured in the *Botanical Magazine* at that time (t. 5216) under the name of *Methonica grandiflora*, Hook. Notwithstanding its early introduction, it is as yet very little in cultivation. The tuber of the plant now in flower was sent to Kew last year by J. T. Last, Esq., who found it growing near Zanzibar. This is a very variable variety, both in the habit of growth and in the colour of the flowers, according to the conditions under which it exists in nature. W. H.

STRAWBERRIES IN 1904.

THE season of 1904 commenced here on June 23, being much later than usual, and owing to the intense heat and drought, it finished abruptly on July 21. The quality of the berries, as grown in our open fields, has been good, but owing to drought in the flowering and setting time, the berries have been smaller than usual. Taking all things into consideration, the noted Kent sort, Sir Joseph Paxton, has been the best, and when fully ripened (not as gathered for market) it has been of rare quality. Among newer varieties are those following:—

Fillbasket has proved remarkably fine in crop and quality, its long, pointed fruit being very handsome, and in this dry season of good flavour, and I think will prove a reliable berry.

The *Laxton* has given a heavy crop, but with us it is not so early by three or four days as *Royal Sovereign*. The quality under the drier conditions of 1904 led me to think that it may be a dependable sort for hot seasons; but the quality is not so good as I could wish.

The *Khedive* has not borne out its reputed character of resisting the drought, and evidently is not suitable for our calcareous soil. The plants are very weakly, and the fruits small.

Climax is a large, hollow berry, of inferior flavour, and can be dispensed with, as in *Royal Sovereign* we have still the best all-round Strawberry either for forcing or for the open ground.

Givon's Late Prolife has been superb, as in 1903, and is without doubt the very best late Strawberry, large in size, continuous in bearing, and splendid in flavour, with deep rich colour.

President Loubet (Veitch) is a promising new late sort of the Waterloo type.

Of the new kinds I have tasted but not grown, Veitch's *Atake* (figured on p. 61, July 23), is an enormous berry of the Leader style, angular-crested in shape, but of fine rich flavour.

Laxton's Reward (figured on p. 20, July 9), is a very handsome berry, and likely to prove a gain; but personally I prefer *Laxton's Bedford*, as it is a globe-shaped berry ripening to the point, and of a bright shining red colour, very taking. These I shall grow and report on in 1905, if all is well.

The Kent Strawberry growers have had a grand season, and the crops have been very large and unusually good for size and colour. But the red-spider and drought appear to have very seriously injured the foliage towards the end of the season.

The grand and more than welcome rains of July 24, 25, 26, have been most helpful to us nurserymen who have to cater for supplying Strawberry plants in pots and runners. But, in any case, they must be later than usual; and the British Queen race, and the high quality sorts as *Frogmore Pine*, *Countess*, &c., will, I fear, be unequal to the demand.

I need scarcely allude to the old-established favourite sorts, as *President*, *Goliath*, *Louis Gautier*, *Vicomtesse Héricart de Thury*, &c. Notwithstanding all the recent introductions they are still indispensable.

Several new alpine and autumnal-bearing kinds are under trial, and I note that *St. Joseph*, *St. Antoine de Padoue*, and others, are already full of green berries, so that there is scarcely a break in the supply, and they will continue till October. *George Bunyard*, Maidstone, July 27, 1904.

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Strawberry plants.—Runners that were layered last month in small pots filled to within half an inch of the rim with good loam, or on turves cut in small squares, should now be ready for planting out in single lines 2 feet apart each way, or a trifle less, in the rows for the less robust varieties. They may also be planted in triangular patches, allowing a space of 4 inches between each of the three plants set out. If for supplying early fruits on a warm border, a distance of 18 inches apart will be ample to allow each plant to grow for one season only. The land should be in good heart, deeply cultivated, with plenty of manure added, and made more or less firm according to the nature of the soil. If the land is already prepared for the reception of the plants, all that is now required is to give the surface a good dressing of soot and to run the hoe through it. Set out the line and plant firm, seeing that the roots are well supplied with water before and after planting. Keep all the early varieties together on one side of the beds, and the later kinds on the other side. See that they are properly and correctly labelled as the work proceeds, and thus avoid any confusion at a later date. Plants so treated should yield a very heavy crop of large early fruits next year, and especially the variety *Royal Sovereign*, which I always consider is better for being treated in this way, and allowed to fruit for one season only and then destroyed.

Early Apples.—Varieties as *Gladstone*, *Red Juneating*, and other early kinds with soft flesh, should be looked over every two or three days, and as the fruits approach ripeness let them be gathered and put into a cool fruit-room. These kinds soon go dry and woolly, and are useless for dessert if not consumed at the right time. In many gardens where blackbirds, &c., are numerous, the trees will have to be protected with fish-netting (if not too large) to save destruction after the fruit ripens. Beauty of Bath, Irish Peach, Kerry Pippin, Lady Sudeley, and Worcester Pearmain are all useful Apples, to keep up a continuous succession.

Pears.—*Doyenné d'Été*, although small, is very juicy and sweet when gathered from the tree about two days before it is ripe. *Beurré Giffard* will be found very useful, and later on *Williams' Bon Chrétien*. All these early Pears must be watched and gathered at the right time, otherwise the fruits are of but little value. They should be gathered at intervals to keep the supply as long as possible. See that all the trees carrying heavy crops are deluged at intervals with water

to increase the size of the fruits and the trees generally, and especially those whose roots are near the surface.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Cauliflowers.—Where convenience can be obtained for protecting these plants during the winter, make arrangements now for a suitable place to form the seed-bed, choosing a sunny, sheltered spot for the purpose. Form the beds so that frames can be placed over them when required. Apply a thorough dressing of slaked lime previous to manuring and digging the ground, and when this latter is finished give another dressing of lime previous to sowing, raking it well in when preparing the ground for the seed. This precaution is necessary to guard against slugs. Previous to sowing the seed tread the ground moderately firm. Make the first sowing on the last week in this month, to be followed by another sowing on the second or third week in September, the time of sowing to be governed by the locality, whether north or south. If these plants are sown too soon and a mild autumn follows they make too much growth, and are difficult to keep during the winter should the latter prove very severe. Small sturdy plants winter better, and do not receive such a check when being transplanted in the spring. Sow thinly, and prick the seedlings off into frames or handlights as soon as they are ready. The old variety *Early London* is a reliable variety for winter work. In Yorkshire we found *Veitch's Autumn Giant* when sown at the same time as *Early London*, stand the winter well, and followed the latter variety in succession. We intend giving it another trial this winter.

Prickly Spinach.—A sowing should now be made in lines about 7 or 8 inches apart, or if the space is limited, at 1 foot apart, planting other vegetables, such as *Coleworts*, between alternate lines. Prepare the ground well by giving it a good dressing of manure, deeply digging and incorporating the manure as much as possible with the soil.

Selecting and Gathering Seeds.—Everything that has been noted of special merit should, if possible, be saved. Choose a bright day for seed-gathering, and see that they are well matured before gathered; after which expose them as much as possible to the sun to thoroughly dry them.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Vanda teres, *V. t. alba* and *V. Miss Joaquim* have now passed their flowering season, but, owing no doubt to the absence of sunshine during the last autumn, the stems were not sufficiently matured, consequently the plants have failed to bloom satisfactorily, although the growth has been luxuriant. These plants will now need attention. Some growers cut off the stems about 2 or 3 feet from the top and insert them in beds of growing sphagnum, tying each stem firmly to neat, strong stakes. The method is a convenient one in many ways, especially where space is of consequence, but as a rule the spikes produce only three or four flowers, whereas, if cultivated in the following manner, the plants invariably give double the quantity of bloom. About half-a-dozen stems are fastened to three or four teak rods, made like a raft. The lower part of the raft is inserted into a pot in an upright position, and made secure with thick pieces of crock, over which is placed a layer of sphagnum. When the plants have overgrown the length of the rafts, about 3 feet of the stems of the plants, together with the upper part of the raft, should be carefully sawn off and lowered into a fresh pot. Another new raft should then be screwed on to the upper part of the old one, to which the top stems should be tied. For a few weeks after disturbance the plants should be carefully shaded; by that time some of the young roots will have adhered to the new wood, when the plants may be gradually exposed to direct sunlight. The lower parts of the old stem which have been cut off, if kept well syringed, will soon send out fresh growths, when new rafts may be added to them.

The particular requirements of these terete-leaved Vandas are met by plenty of sunshine and copious overhead waterings several times a day during active growth. The Mexican house is the best place for *V. teres*. If given plenty of fresh air during the day, when the sun is shining upon the plants, and a thorough syringing at closing time, they will bloom profusely. The distinct hybrid *V. Miss Joaquim* grows best at the hottest end of the plant stove, where the stems receive uninterrupted sunlight. *V. Hookeriana* should be treated in a similar manner. The proper time to cut the stems, repot, &c., is in about three weeks hence. *Vanda Amesiana* and *V. Kimballiana* should be grown in the same house as *V. teres*, and in such a position that the air can circulate freely around them. *Angraecum Eichlerianum* is another Orchid whose roots cling firmly around teak-wood rods, and at the present time it may be cut down in the same manner as advised for *V. teres*. The plant delights in a hot, moist atmosphere during its season of growth. *Renanthera coccinea* is in full growth. The plant should not be disturbed now, the roots entwine themselves firmly around a large Birch pole. It should, during its growing season, be placed in a similar position as *V. Miss Joaquim*, but during the winter a cool, dry situation is the best place for it. *R. Sterei* and *R. matutina* should have identical treatment. Plants of the rare *Vanda Sanderiana*, *Aërides Lawrenceæ*, its buff-coloured variety *Sanderiana*, and *A. Rohaniana*, are now showing their flower-spikes, and should be liberally supplied with water until the flowers are past. Every care must be taken to preserve both roots and flower-spikes from all insect pests, particularly cockroaches. None of these plants that are weak or unhealthy should be allowed to produce a flower-spoke.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

The Rockery.—The repeated waterings of late will in many places have washed away the soil from around the plants. Where this has occurred some good soil should be pressed round the plants thus exposed. This will induce fresh side shoots to root in the soil. The new growths thus formed may be taken off in a few weeks, and will be useful for increasing the stock. Remove all old flower-stems, dead leaves, and seed-vessels; any seeds contained in the latter may be sown as soon as ripe. A frame should be near the rockery for increasing the stock of any of the plants, also for protecting those members of the rockery which are not quite hardy.

Flower Seeds.—The gathering of these should be done as they become ripe, that of Iceland Poppies if left too long gets scattered by the wind. The best varieties of *Delphiniums* should be selected for seed-saving, also *Sweet Williams* and any other plants that will do for the "wild garden." The seed should be placed in bags, hung up in a dry shed, and labelled.

Dahlias.—The frequent attention given to Dahlias during the past few weeks will now be amply repaid in an abundance of good flowers. Keep all old flower-heads picked off, and remove some of the side shoots. It is well to give old stools plenty of room. Fresh mulching should be given the plants, as the old mulching will have had all the manurial qualities washed out. Cactus varieties required for exhibition purposes should be thinned. Pompons may be left without thinning, as they are required to produce a number of small, well-shaped flowers. The single Dahlias are useful just now for decorative purposes, being light and of good colours, there being plenty of good varieties to select from. Small quantities of Peruvian guano are very efficacious in developing the colours of these flowers.

Carpet Bedding.—Cuttings of plants from these should now be taken, and inserted round the sides of 60-pots. If plunged in a good brisk bottom-heat, and kept shaded, they will strike readily. The cuttings should be taken without disfiguring the beds. Those shoots which have to be removed in order to keep the beds in their allotted spaces will suit admirably for the purpose of propagating. Keep all flower-heads picked off *Mesembryanthemum* and *Echeveria* plants. If

kept neat and tidy for the next month, the carpet-bedding designs will then be seen at their best.

Climbing Roses.—These will have become crowded with growth during the past few months, and should now have a few of the old shoots removed. Weak-growing varieties should have the old shoots cut out, especially those that are unhealthy, and the young shoots tied in and given every encouragement to grow. *Rêve d'Or*, one of the best climbing varieties, has made enormous growth this season, and will require plenty of room for the young shoots to develop. This variety does not like hard pruning. *Crimson Rambler*, which is now over, may be slightly cut back. *William A. Richardson*, if on a south wall, will keep blooming for some time. All these Roses will benefit by a good washing with clear water as often as possible.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Early Pot Vines.—Every endeavour should be made to get the wood thoroughly matured before turning the plants outside. The foliage must also be thoroughly developed before the plants are placed outside, or they will get tattered and torn by rough winds before the proper development of the buds from which the future crop of fruit is expected is completed. Take all possible care of the foliage, and stand the plants in a sunny, sheltered position against a south wall. If the pots were plunged while under glass, when removed outside give slight protection for a time from the direct rays of the sun.

Young Vines of this season's planting will be benefited by a little warmth from the pipes, at the same time maintaining liberal ventilation in the house. A gradual shortening of the laterals should be resorted to.

Vines.—Where ripe Grapes are hanging it will now be necessary to protect the fruit from wasps and flies, which are making their appearance in considerable numbers. We find nothing more effectual for this purpose than placing wasp-proof hexagon netting over the ventilators. It is necessary when using this netting to have it of sufficient width to allow the ventilators to be opened to their fullest extent, for without plenty of ventilation Grapes will not ripen well, nor remain in good condition when ripe for any length of time at this season. Judgment must be exercised with regard to the supply of water at the roots, and when considered necessary it should be applied early in the day, but only in sufficient quantity to keep the foliage fresh and the fruit from shrivelling. Stop all laterals sufficiently close to allow a free circulation of air between the foliage and the glass.

Peaches and Nectarines.—Early forced trees which have now lost their foliage should be pruned according to their requirements. Those trees which received full attention as the season advanced will require little, if any, pruning. Use every means to secure rest for the trees, taking care, however, to allow the trees sufficient water at the roots, using the syringe occasionally. Should the borders be considered unsatisfactory, no better season than the present could be chosen in which to renew them. Remove the soil down to the roots of the trees and add fresh whole turves, working-in half-inch bones, wood-ashes, charcoal, and lime-rubble, make the whole firm, and give a moderate watering.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Gardenias.—Plants that were cut back in the spring with a view to securing a supply of flowers at the end of the summer, will have made good growth by the present time. The plants should now be afforded more ventilation for a time, to ripen the growth and set their flower-buds. A frequent cause of bud-dropping in the case of plants grown in pots, is due to the omission to remove the young shoots which are frequently produced alongside the flower-buds, and which, if allowed to grow, divert the energies of the plant from the flower-buds, and in most instances cause them to fall. Young plants in need of repotting may be

afforded a shift now, they will then become well established before the winter. If the potting be carried out without unduly checking the plants, they will quickly root into the new soil, and continue to make good growth. *Gardenias* enjoy full exposure to the sun, and while making their growth should be given a high temperature, and abundant atmospheric moisture. A suitable compost for potting consists of three parts of good fibrous loam, one part leaf-soil, together with some coarse silver-sand, and a little well-decayed manure. Every effort should be made to keep the plants free from mealy-bug and scale. Paraffin and water may be used as an insecticide with safety on such smooth-leaved plants as *Gardenias*, adding a wine-glassful of the oil to 3 gallons of water. If infested with mealy-bug the plants should be taken out-of-doors, laid on their sides, and well syringed with the insecticide, taking care to keep the mixture well agitated with the syringe during the operation. This may be repeated every ten days until the plants are clean, but should be discontinued when the flower-buds begin to show themselves.

Paneratiums.—While these plants are in bloom they may be removed to a cooler house with safety, and in this way a lengthened succession of flowers may be obtained. *Paneratiums* are very subject to the attack of thrips, and when the plants are in flower the best mode of destroying these insects is to sponge the plants with tobacco-water, or some other insecticide. When such plants as *Paneratiums* and *Amaryllis* are being sponged the mature thrips often take refuge between the close-growing bases of the leaves, but they can be destroyed if a stiff feather is dipped in the tobacco-water and pressed down between the leaves.

Primulas.—All but the latest batches should now be in the pots in which they are to flower. Grow them on a cool, moist staging, and protect them from strong sunshine. Provide liberal ventilation; *Primulas* are frequently spoiled by keeping them in too close an atmosphere. During the summer a cold frame facing north suits them well. Give the earlier flowering plants some clear soot-water, while a little artificial manure may occasionally be sprinkled on the surface of the soil.

THE APIARY.

By EXPERT.

Work in the Apiary.—The season almost past, will, I am afraid, have turned out as a whole anything but satisfactory for bee-keepers, the cold nights in the early spring being the cause to a very great extent. Those who were fortunate enough to have kept their hives warm and fed on through May, will no doubt have done better. There should not be any honey or comb lying about to set the bees robbing, and all entrances should be closed to about half the width. If, however, the hot weather continues, the entrance must be left, and a cloth dipped in carbolic acid laid over the front and near the entrance, or a little carbolic powder sprinkled about will answer the same purpose. A piece of glass is often found to prevent robbing, by standing up in front of the entrance. All partly-filled sections can be taken off and extracted, unless they are kept for feeding later on. In examining hives and taking away frames of honey, do not keep the hives open longer than is necessary. As the slightest thing will induce your bees to rob, the extracting should be done as far away from the apiary as possible. As soon as the frames are taken out they should be extracted; being warm from the hive the honey will be thrown out much easier, and in the evening the frames can be placed back in their hives for the bees to clear out; they can be removed later and packed away. Stocks that have done badly should be examined and requeened if healthy, and if not the usual methods taken as described previously in these articles. There are plenty of chances of securing good queens at very little cost now, as people are destroying their bees in the skeps. A fellow bee-keeper can be asked to secure one when driving bees, or do the same yourself; by building up your weak stocks now by the medium of adding driven bees, a weak stock will be rendered strong for next year. The bee-keeper should remember that twelve strong stocks of bees are worth double the number of weak ones.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUG. 20—German Gardeners' Club meet.
 TUESDAY, AUG. 23—
 { Royal Horticultural Society's
 Committees Meet.
 { Royal Oxford Hort. Soc. Show.
 Brighton Hort. Soc. Show
 (2 days).
 WEDNESDAY, AUG. 24—
 { Harpenden Hort. Soc. Show.
 Reading Hort. Soc. Show.
 THURSDAY, AUG. 25—Flower Show at Sandy.
 FRIDAY, AUG. 26—
 { Royal Botanic Society, General
 Meeting.

SALES FOR THE WEEK.

MONDAY NEXT—
 Trade Sale of Dutch Bulbs, at 67 and 68, Cheapside,
 E.C., by Protheroe & Morris, at 10. 3000 lots.
 WEDNESDAY NEXT—
 Trade Sale of Dutch Bulbs, at 67 and 68, Cheapside,
 E.C., by Protheroe & Morris, at 10. 3000 lots.
 THURSDAY NEXT—
 Trade Sale of Dutch Bulbs, at 67 and 68, Cheapside,
 E.C., by Protheroe & Morris, at 10. 3000 lots.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced
 from observations of Forty-three Years at Chiswick
 —61°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 17 (6 P.M.): Max. 66°;
 Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street,
 Covent Garden, London.—Thursday, Aug. 18
 (10 A.M.): Bar., 29.9; Temp., 62°. Weather dull.

PROVINCES.—Wednesday, August 17 (6 P.M.): Max. 64°,
 S.E. Coast of England; Min. 54°, North Coast
 of Ireland.

The Garden
of England.

It is not to be supposed that Kent was always, as now, the Garden of England, and at all times famous for Hops and Cherries. Until the time of King HENRY VIII. it may be supposed to have shared in the desolation and poverty from which the rest of the country was suffering. It was to RICHARD HARRYS, the King's Fruiterer, that an improvement was due. It may be said of him that he found England a wilderness and made a considerable part of it a rich and pleasant garden. Tillage was at a low ebb, sheep-farming being considered more profitable in the then state of the wool trade, and the rural population was in difficulties.

While the poor starved the rich lived largely on Flemish and French produce. But the King's Fruiterer could not see why England should not have orchards of her own, and in the year when the lesser monasteries were suppressed he did what in him lay towards founding that period of comparative prosperity and internal peace which culminated in the latter part of Queen ELIZABETH's reign. Of greater importance perhaps than his undertaking in itself, was the fact that its wonderful success incited men to exploit in other ways the fertility of the soil, and so brought back more people to the land.

An article in *Longman's Magazine* for August is written by Mr. EDWARD WRIGHT "In Praise of Richard Harrys," and it is from that article that our remarks are here abridged. Mr. WRIGHT quotes from WILLIAM LAMBARDE'S *A Perambulation of Kent*, a delightful work, and familiarly known as "Lambarde's Kent." He extracts the following description of Tenham parish:—

"Heere have wee, not onely the most dainty piece of all our Shyre, but such a Singularity as the whole Brittainish Iland is not able to patterne. The Ile of Thanet, and those Easterne parts, are the Grayner; the Weald was the Wood; Rumney Marsh is the Medow plot; the Northdownes towards the Thamysse be the Conygarthe, or War-

reine; and this Tenham, with thirty other parishes (lying on each side this porte way, and extending from Raynham to Blean Wood), bee the Cherrie gardein and Apple orcharde of Kent."

That the district still deserves this description the official returns of the Board of Agriculture plainly show.

It was in this favoured district that "Our honest patriote RICHARD HARRYS (Fruiterer to King HENRIE the 8) planted by his great coste and rare industrie, the sweete Cherry, the temperate Pipyn, and the golden Renate. For this man, seeing that this Realme (which wanted neither the favour of the Sunne, nor the fat of the Soile, meete for the making of good apples) was nevertheless served chiefly with that Fruit from forrein Regions abroad . . . and those plantes which our auncestors had brought hither out of Normandie had lost their native verdour . . . he (I say) about the yeere of our Lord Christ 1533, obtained 105 acres of good ground in Tenham, then called the Brennet . . . and with great care, good choise, and no small labour and cost, brought plantes from beyond the Seas, and furnished this ground with them, so beautifully as they not onely stand in most right line, but seeme to be of one sorte, shape, and fashion, as if they had been thorow one mould, or wrought by one and the same patterne."

Seven years after the planting of the New Garden, as it was called, £1,000 worth of Cherries was produced from 32 acres of the land. Rumours of such extraordinary crops created an interest in fruit-growing even to the remotest parts of England, and many country gentlemen obtained grafts from Tenham. When Mr. JINGLE passed through Kent in his memorable journey, he found the beautiful county maintaining its reputation, and it still does so. On the whole, agriculture has made gigantic strides during the last half century, and the work of scientists should be generally acknowledged, considering how it has been the means of achieving this progress. It is not, however, science that suggests whitewashed tree-trunks, barbed wire, and other unpicturesque objects in orchards; these are the result of the growers' greed of gain, which also tends to produce fruit inferior in quality but superior in quantity, and makes the consumer sigh for the "choyce and rare" fruits of long ago, instead of the comparatively "heavy croppers" of to-day.

ANGRÆCUM INFUNDIBULARE, Lindl. (see Supplementary Illustration).—Our illustration represents a flower of this remarkable species, for which the Right Hon. Lord ROTHSCHILD (gr., Mr. ARTHUR DYE), was awarded a First-class Certificate at the Royal Horticultural Society, July 26, and which was duly recorded and described in the *Gardeners' Chronicle*, July 30, p. 82. The plant was originally discovered by BARTER many years ago on Prince's Island, West Africa, but never introduced into cultivation until it was again found by Major H. B. RATTRAY, then of the King's African Rifles, on the Victoria Nyanza, Uganda, in 1892. The discoverer likened its fragrant flower to "an Arum Lily with a green, funnel-shaped spur and curved slender tail," and the rough description is not inapt. The broad labellum of the flower is pure white, the spur is pale green, and the more slender tail duller green. The manner in which the slender spur is curved over one of the adjacent roots is suggestive of its being a provision to steady the heavy, slender-stalked flower, and facilitate its fertilisation by the agency of

some large insect. It requires to be grown in a warm, moist, and tolerably shady house. It appears to be very free-growing. A good specimen of it is in the collection of Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. WHITE), but although obtained six months earlier than the Tring Park plant, it has not yet bloomed.

SIR TREVOR LAWRENCE.—By an oversight we omitted to mention that the excellent portrait of Sir TREVOR LAWRENCE which we gave in our number for July 30, in connection with the opening of the new Hall in Vincent Square, was taken from a photograph executed, like the others that we gave on that occasion, by Messrs. FRADELLE & YOUNG, of Regent Street.

BRITISH GARDENERS' ASSOCIATION.—We are asked to publish the following reminder: Kindly allow me to remind readers of the *Gardeners' Chronicle* who are interested in the British Gardeners' Association that the Committee of Selection cannot proceed further until the sum of £250 has been secured to meet the cost of a central office in London, a paid secretary, and other expenses, and till 500 gardeners have joined the Association. Of the £250 required, about £100 has been subscribed and promised, whilst the number of applications for membership up to the present is fewer than it should be. Expenses so far have been more than covered by donations received for the purpose; we are therefore in a position to keep donations towards the £250 and entrance-fees and annual subscriptions untouched until the Association is established on the lines prescribed by the prospectus. Forms of application and copies of the prospectus may be obtained from me. Candidates should send copies of their testimonials, or a stamped addressed envelope if originals are sent. Entrance-fees and subscriptions will be returned to candidates who are not elected. Secretaries of gardeners' societies are invited to co-operate with us in the effort to establish an association of professional gardeners by inducing their members to join it, and by holding meetings for the purpose of making its aims and objects known. Arrangements will be made by the Committee for a series of meetings in various centres for the purpose of more fully explaining the objects of the Association and increasing the membership. It is hoped that the Association will be brought up for discussion by every gardeners' society throughout the kingdom during the coming winter. It is only by the exercise of patience and perseverance, and a determination on the part of all qualified gardeners to combine, that the desired improvement in their condition can be brought about. W. Watson, Kew Road, Kew.

NEPENTHES MASTERSIANA.—Messrs. JAS. VEITCH & SONS send us a specimen showing two leaves fused into one at the base, each bearing a pitcher at the extremity. The union was complete to about the middle, so that the appearance was as if one leaf had divided into two tendrils with their pitchers.

SWEET PEAS.—We lately received from Mr. M. CUTHBERTSON, of Rothesay, a box of cut flowers of Sweet Peas of the leading varieties. Among the whites were Duchess of Westminster (flushed with rose), Lady Ormsby Gore, Maid of Honour. Pink colours were represented by Chancellor, Colonist, and Prince of Wales (deep rose), Mrs. Dngdale, Miss Willmott. Coccinea is a splendid red; Duke of Westminster (purple), Mars (scarlet), Navy Blue (blue), &c. The colours were finer than we are accustomed to see inland.

POISON—CAUTION.—For selling a bottle of XL-All Ant Destroyer, containing sufficient nicotine to kill from 75 to 150 persons, a City firm of ironmongers has been fined by the Lord Mayor of London. The bottle was not labelled poison,

the vendor was not known to the purchaser, nor was any entry made in a poison register. Mr. DOBBS, for the defence, raised the point that the compound was not a poison within the meaning of the Pharmacy Act, because it was intended to be used for horticultural purposes, and not as a medicine. It is much to be desired that all poisonous substances or compounds, by whomsoever sold, and for whatever purposes intended, should be labelled "Poison."

ACORUS CALAMUS AS AN INSECTICIDE.—The Sweet Flag (*Acorus calamus*) has been lately turned to a new use. Mr. H. N. RIDLEY, in the *Agricultural Bulletin of the Straits and Federated Malay States*, mentions that the Malays often cultivate the plant for medicinal purposes. The *Acorus* is aquatic, and bears sword-like leaves about 3 feet long, and a creeping stem. This aromatic plant, he says, is used by the Malays as follows:—"The dried roots are pounded to powder, and spread round the base of a tree. All the ants die where it is scattered, and no others come up to the surface to replace them, as in the case of other insecticides. The experiment was tried for ten days and found to be efficacious. The plant is so common and so easily grown in any wet ditch that it may be well worth trying it further." It seems as though troublesome termites might be thus kept under in various tropical and semi-tropical localities.

THE BIG GOOSEBERRY SEASON.—The champion Gooseberry at the Harborne Gooseberry show weighed 26 dwts. 5 grs. The heaviest in our records is London (37 dwts. 7 grs.), shown at Cheddle by Mr. JOHN FLOWER, in 1852.

CARDIFF GARDENERS AT READING.—About sixty members of the Cardiff Gardeners' Association visited Reading lately, and were shown over Messrs. SUTTON's Royal seed establishment. On arrival at Reading at 10 o'clock the party was met by Mr. ARTHUR SUTTON, one of the partners, and escorted to the Market Place, where they inspected the various indoor departments. Subsequently they were conveyed by electric car to the seed trial grounds, where luncheon was served. After visiting the conservatories, the party went up the river in a launch to Henley-on-Thames, and went over the gardens of Park Place, Mrs. NOBLE providing tea.

THE ANGLESEY SALES.—The principal feature of interest (says the *Liverpool Mercury*) in the pleasure gardens was a group of Japanese dwarf trees. The idea was generally entertained that phenomenal prices would be obtained for these oddities, and it was with something of a shock that people found them going for sums ranging from 15s. to £8. Major HUGHES, of Plas Llangoed, was the largest buyer, securing a Bamboo for 15s.; a *Punica granatum*, fifty-six years old, for 75s.; an *Acer palmatum*, fifty-four years old, for £6 15s.; and a forest Maple, sixty years old, for £8. Dr. WOODHOUSE, of Llandudno, secured all the patriarchs of the group, paying 70s. for a 150-year-old *Cycas revoluta*; £6 for a *Thuja obtusa*, 131 years old; and £6 for a 166-year-old *Lagerstroemia*. A *Carpinus japonica*, fifty-one years old, went to Mr. HODGKINSON for £5 15s. A double-flowering Cherry was secured by Mrs. HUGHES HUNTER, of Plas Coch, for 5 guineas. Colonel PLATT bought a 126-year-old *Thuja obtusa* for £6 15s., and a *Podocarpus chinensis* for £6. Major TURNER spent 42s. 6d. on a 42-year-old *Nandina domestica*, and Mr. LORT secured a 50-year-old Oak for £6 15s. 6d., the total for the dwarfs being £76 8s., which is said to be quite as much as the Marquis paid for them. The contents of the Marquis of ANGLESEY's kitchen garden, unsold on Tuesday, were disposed of on the 11th inst., the total proceeds being under £50. The only feature of

interest in the sale was a collection of Orchids, and these went at a literally ruinous sacrifice. For example, a lot of fifteen *Oncidiums* were knocked down to Mr. GRIFFIN, of Haydock, for 5s. The same purchaser secured eight *Zygopetalums* for 5s., and a group of six *Maxillarias* for 5s. A pot of *Cattleyas* and two pots of *Lælia* were sold for 5s. A hanging basket of *Stanhoepia* and a pot of the same went for 4s. Three pots of *Lycaste* realised 3s. A pot of *Cœlogyne* and another of *Cymbidium* went for 5s., twenty-four *Cypripedium* for 2s., and eight *Calanthes* for 9s. A keen fight between two bidders resulted in Mr. SPEED, of Bangor, securing twelve large *Dendrobiums* for 40s.

STOCK-TAKING: JULY.—The Trade and Navigation Returns for the month of July have a story to tell the reverse of that recorded for June. We have dropped the rise both of imports and exports for the month, but show an increase in the total for the seven months which have passed away. The value of the imports of foreign and colonial produce of all descriptions is placed at £40,956,601 as against £45,653,320 for the same period last year—a decrease of £4,696,719. It is affirmed that the purchasing power of the masses is affected by the taxation of articles of food. The total imports for the past seven months are valued at £312,893,391, as compared with £306,086,900 for the same period last year, showing a gain of £6,806,491.

IMPORTS.	1903.	1904.	Difference.
	£	£	
Articles of food and drink—duty free	10,268,913	9,282,435	—986,478
Articles of food & drink—dutiable	11,131,149	8,584,739	—2,546,419
All other imports...	24,253,258	23,089,436	—1,163,822

The value of the month's importations of flowers was £2,884, against £3736 in July, 1903, or a decrease of £852.

IMPORTS.	1903.	1904.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw—			
Apples	80,147	82,076	+1,929
Apricots and Peaches	5,810	8,636	+2,826
Bananas ... bunches	270,107	394,366	+124,259
Cherries	46,684	76,765	+30,081
Currants	57,311	91,637	+34,326
Gooseberries	18,130	13,615	—4,515
Grapes	18,855	25,248	+6,393
Lemons... ..	113,571	120,227	+6,656
Nuts—Almonds ...	5,027	4,623	—404
Others used as fruit	59,224	37,797	—21,427
Oranges... ..	59,648	161,273	+101,625
Pears	12,323	40,351	+28,028
Plums	30,638	151,349	+120,711
Strawberries	5,001	3,674	—1,327
Uncenumerated ...	152,673	185,803	+33,130
Vegetables, raw—			
Onions ... ..bush.	534,190	478,807	—55,383
Potatoes ... ..cwt.	1,047,235	1,008,102	—39,133
Tomatoes	227,361	235,824	+8,463

It will doubtless be interesting to note that of dried fruit we imported last month to the value of £28,846, against £13,637 for the same period last year, or an increase of £15,209.

THE EXPORTS

for the month were valued at £24,783,582, against £25,875,545, a decline of some £1,091,963. For the period of seven months—January to July—the figures are £168,900,249, against £168,398,170—or a gain of £502,079. Among the exports for the past month may be noted that of fruit, preserved and otherwise—£61,483, against £56,426 for the same period last year—an increase of £5,057.

PETUNIAS.—Summer bedding plants have not in many cases been up to the usual standard this season, owing to the dry conditions which prevailed when planting was over, many of the plants making but little growth and failing to furnish the beds. Petunias, on the other hand, have flourished well, the season suiting them admirably, and they have made excellent growth and flowered plentifully. Some flowers of *Petunia* have been sent us by Messrs. JAMES CARTER & Co., High Holborn, London, measuring quite 6 inches across, and of excellent shades of colour. They are known as the Empress Petunias, the strain showing results of careful and judicious selection.

POTATO NORTHERN STAR.—Messrs. BRADLEY BROTHERS, of Bardney, Lincolnshire, have received the following from Houghton, in Australia:—"We dug the crop of the first consignment of Northern Star Potato we purchased from you, and the yield has more than exceeded our expectations; 140 lb. were lifted for every pound of sets planted, and the sale of them is proving satisfactory." The above refers to a consignment sent by Messrs. BRADLEY in December, 1903, and the same Australian firm have asked for a quotation from Messrs. BRADLEY for a considerable quantity this year.

"AMERICAN FRUITS."—This is the title of a new monthly "International journal for nurserymen, growers, dealers, and shippers of fruits of all kinds, circulating in the United States and Canada, and in foreign countries." As "*American Fruits*" is declared to be the highest grade of horticultural publication issued from any press in any country, it is obviously unnecessary for us to say anything in its favour. We notice a portrait of, and note on, the career of Mr. W. T. MACOUN, who has charge of the Botanic Garden, Ottawa, as well as of the central experimental farm. He is the son of the Dominion botanist well-known in botanical circles in this country.

GARDENERS AT CRICKET.—The Royal Gardens, Kew, Cricket Club journeyed to St. Albans on Saturday, the 13th, and succeeded in defeating the Anguloa C. C. (Messrs. SANDER & SON) by twenty-two runs. The visitors greatly enjoyed their outing, being shown round the nursery after the match, and entertained at an excellent high tea provided by Mr. SANDER. The Royal Gardens C. C. is having a very enjoyable and fairly successful season, their heaviest defeat as yet being inflicted by Messrs. ROCHFORD, with whom, however, the Kewites are not without hopes of being able to cry quits after an encounter at Kew on Saturday, 27th inst.

A FORECAST OF THE SEED CROPS.

It is now possible to give some particulars as to the probable yield of the seed crops in the coming season; the information supplied is based upon a personal survey of the crops in the principal seed-growing districts of this country, and upon reliable advices from abroad.

Peas.—It is a remarkable fact that about July 20 in last year many of the early varieties of Peas were still producing bloom; but at the corresponding period in 1904 the early varieties were being pulled for harvesting—so much do the weather and seasons change and affect produce. In reference to the prospect of the crop of seed for the present year, it is only a reasonable expectation that after the very wet season of last year the condition of stock-seeds would be so indifferent that the growth of the plants would be correspondingly inferior, the result being that the present season's harvest is likely to be a very thin one. Another factor as governing the scarcity was the fact that the

price fetched by Peas last season was so high as to be a great inducement to sell what would otherwise have been sown, and so the breadths put out are smaller than usual. It seems quite certain that seed Peas will gradually rise in value, and some sorts will be as dear as last year. This remark applies particularly to the late varieties, especially as it is anticipated that none will be forthcoming from the Continent; the crops saved in New Zealand are also reported to be very short. In Canada seed Peas for stock were sown a month later than usual on account of the inclement weather, but it is too early to speculate as to the probable yield of seed in the Canadian Pea-districts.

Broad Beans.—The crops in Lincolnshire and in the adjacent Bean-growing districts are seriously affected by the black or smother-fly; its ravages are affecting both the size of the pod and the Beans within it, though it is probable, given the continuance of fine weather, the samples will be good.

Beans, Kidney, Runner and Dwarf.—Generally speaking, the breadths and plants are thin, and in certain localities, where there have been experienced recent rains, the flowers are now setting their pods more numerous than previously. Reports from Germany which came to hand a short time ago stated that the crops of Beans had been injured by frost. Subsequent reports are of a more favourable character.

Turnips, White and Swedish.—So extremely short is the yield, that it is said the crop may be written off as practically nil. The main cause of this extreme scarcity is the wet character of the autumn, which prevented stock seeds from being sown. In certain districts, where some growers are more fortunate in the character of the soil and could sow, the soddened and cold character of the ground resulting from the rains which followed prevented the plants from thriving as well as could be desired, and in the case of Swedes in particular, what plants survived were seriously affected by canker. It is confidently expected that prices for the best qualities of seeds will be very high.

Mangel Wurzel.—Fine drying weather, with wind and sun, had the effect of hardening the surface of the soil to such an extent that the plants did not thrive in a satisfactory manner, and thus the yield of seed has been materially affected. Better results are anticipated from some parts of Essex, but the black-fly has infested many crops, and it is anticipated that Golden Tankard and Golden Globe, with other forms of the choicer stocks of Globes, will command double the prices of last year.

Cabbages.—Varieties chiefly grown for cutting in spring, such as the Offenham, Ellam's Early, and Wheeler's Imperial, have run to bloom in a very imperfect manner; and the plants are small, owing to the continued wet weather, therefore seeds of these varieties will be scarce. In more favourable localities, where there is an improved growth, the crop appears to be satisfactory.

Onion.—The Onion-plant for seed is not so plentiful as last year, and bulbs for planting for seeds another year appear to be scarce and small. It is assumed that the plantations made for seeds in 1905 will be as limited as those in 1904.

Carrot.—The seed crop in this country so far looks well. From France comes the report there is great danger to the Carrot crop from the small white maggot which appears in the flower-heads and practically destroys the crop. It is a pest which is found difficult to grapple with.

Lettuce.—Very little Lettuce-seed is now grown in this country for seed-saving. In the Lettuce-growing districts of France and Germany the crops are favourable, and it is anticipated a fair yield will be forthcoming.

Cress.—Average breadths of Cress were sown, and it is expected there will be both a good yield and good samples.

Mustard.—Seeds are plentiful and cheap, and samples good.

Parsley.—Good breadths are out for seed purposes, and so far the crops promise very well.

Home-grown Flower Seeds.—Nasturtium: Seeds of Nasturtium were scarce last year, but this season promises a good crop. Sweet Peas are also promising well. Wallflowers: All promise well except the yellow section, of which there is a likelihood of a scarcity. That fine selection of the dark known as Vulcan has become very popular.

Potatos.—Great breadths were planted, but they do not appear to be so uniform in growth as is generally the case, and blank spots are visible. In the Potato-growing districts it is thought improbable that high-priced varieties, like El Dorado and Northern Star, will give such results as are anticipated from the high prices of the seed. Many rivals to these varieties are being announced. *Pisum*.



FIG. 55.—*HUERNIA OCULATA*.
Flowers purple with a white centre.

HUERNIA OCULATA.

This interesting little plant was first introduced in 1880 through Captain Een from Damara-land to Kew, where it flowered in June of the same year. It was published in the *Botanical Magazine*, t. 6658, in 1882, but seems to have been lost.

In 1901 Mr. Dinter sent living specimens of the plant from Windhoek to Messrs. Haage & Schmidt, Erfurt, and to this garden. It has since been well established, is easily propagated, and new flowers annually from August to October.

The stems in our plants are shorter and the flowers more numerous than those in the figure in the *Botanical Magazine*, while the flowers appear just above the soil.

The stems are five-angled, the angles being flat and compressed, and the sinus between them is deeply cut. They are of a dull, glaucous green colour, overwashed with brownish spots. The teeth of the angles are patent, triangular, decurrent at the base, with a very faintly articulated acute point representing the very rudimentary leaflet.

There are about six flowers produced on a short, thick peduncle thrown a little above the

soil. Several subulate bracts are present. The pedicels are short, 2 to 3 lines in length. The segments of the calyx arising from a narrow lanceolate base are subulate, and as long as the tube of the corolla. Corolla campanulate, $\frac{3}{4}$ of an inch broad, the five larger lobes short, triangular, with five nerves at the back; the intermediate five are minute. The colour of the corolla is greenish outside with rose at the base, and having brown stripes at the lobes, the whole being finely tuberculate or papillate. The inside of the tube is also finely papillate. The limb is dark brown-purple, velvety, and sharply defined from the pure white of the tube, the base of the tube and the column being spotted with fine pink markings.

The outer corolla in our plants is nearly quite adnate to the column, the lobes and the sinus between them are only faintly indicated, quite different to the figure in the *Botanical Magazine*, whilst the rest agrees with it. Despite these slight differences I have no doubt that my plant belongs to the Hookerian species. Mr. Dinter named it *H. Bernsmanniana*, under which name it appeared in Haage and Schmidt's catalogue. Although a native of South-west Africa, its nearest allies are the *H. Penzigi*, N.E.Br., from Abyssinia, and *H. coccinea*, N.E.Br., from Somaliland, all characterised by the campanulate flowers without fleshy limb, and the short conical segments of the inner corolla. *Alwin Berger, La Mortola*.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

COLOURING OF FRUIT.—The question of the colouring of Apples and other fruit is one of importance, and demands the attention of growers. There are several reasons why they should consider the matter. First of all, fruit badly coloured is always flat and insipid in flavour when compared with that of well-coloured fruit. Their market value is lowered, for fruit badly coloured never sells so well as that with a rosy cheek. To a great extent the colouring rests in the hands of the cultivator. True, he cannot produce sun and air, but he can give the fruit every facility to catch what there is of either by giving attention to the trees in the right way and at the right time. It is not the man who with saw and billhook proceeds to cut and maim the trees in winter who produces next year's crop of well-ripened, delicious fruit, but he who takes care how he plants, and if the subsoil is not genial takes care that no tap-roots have a chance of penetrating to it; one who through the summer months prevents the centre of the tree from being crowded with useless growth that has only to be cut away in winter. I am aware there is much to do in summer, but a little extra labour now will be well repaid in the following season, not only in the quantity but in the quality of the fruit. Care should also be taken in the gathering of the fruit. In the case of market fruit we should learn from importers and others the value of selection and good packing if we wish to compete with imported fruit. I am quite sure that by judicious attention to summer pruning we may materially improve both the quality and the quantity of home-grown fruit. *D. D., July 28, 1904.*

CALYX PIERCED BY BEES.—During the last few days I have noticed that although our Kidney Beans are in full bloom, and are being visited by thousands of bees, the yield of Beans is very poor. On one stalk, out of twenty-three blooms only one has succeeded in forming its fruit. Being curious to know the why and wherefore, I watched. My father attributed it to lack of moisture; but this is not the case. The fact is, the visits of the bees are useless in the majority of cases. Instead of the bees pitching on the stem and moving the curled keel away to reach the entrance to the nectary, the insects have found an easier way. They work round the ventral side of the flower, and extract the nectar by means of two holes which are pierced through the calyx-

Cube into the nectary. In some cases the short sepals on the ventral side has been torn away, and one large hole made. Whether the bees actually do this I am unable to say, but there are certain small insects in many flowers which might possibly help at the work. In any case, the bee obtains the nectar without doing the necessary labour. The Kidney Bean should be carefully watched, and notice taken of the means it uses to prevent such abortive visits. I should like to know whether this is common, and also whether it has been observed before. *Charles Langton Lewis, Plymouth Road, Penarth.* [Quite a common occurrence. Ed.].

FLOWERING BAMBOOS.—With regard to Mr. J. Mayne's note on p. 116 upon flowering Bamboos, I may say that there is a number of *Phyllostachys Henonis* in these gardens. I observe that all plants of *P. Henonis* which were transplanted from the open ground with a good ball of soil have fruited this season, and are unfortunately dead, or nearly so. I have also noticed that where established plants have been overhung by trees, and have been comparatively starved, they also have fruited. Other established plants which were in a better position have thrown a few fruiting culms, which were at once cut out. Plants turned out of pots with the culms intact are thriving, and in only one instance can I see a culm of this year's growth flowering. It is evident that the plants in these gardens that are flowering so freely are those that have received a check by transplanting or have been overhung by trees. I am afraid Mr. Mayne will lose those Bamboos where all the culms are flowering. *J. W. Miles, Mandeville House, Isleworth.*

— In answer to Mr. Rashleigh's note, p. 116, I may say that I have this year seen *Phyllostachys Castillonis* in flower in three gardens, as well as *P. Boryana*, *P. Henonis*, and *Arundinaria Simoni*. Early in the spring I heard from a friend that his specimens of *P. Henonis* were flowering, and shortly afterwards closely inspected some particularly fine examples in Cornwall, but could detect no sign of flower. During the past week, however, on again visiting the same garden, I found that the majority were seeding, some on every culm. Last month in a Devon garden, where a plantation of Bamboos was made in May, 1903, I found that four out of eight clumps of *P. Henonis* were seeding. Three of these were small plants about 6 feet in height and were bearing seed on every culm. The largest, 14 feet in height, had only one flowering culm, which was cut out, so that unless it produces seed on the at present flowerless culms, it should not suffer. It was stated some time back in these columns that *Arundinaria Simoni* did not die after seeding, but plants that seeded last year have every appearance, up to the present, of being dead. Of two large clumps that seeded last summer, one has been untouched and the other cut down, but neither has shown the slightest sign of life up to this date. In Cornwall a very large clump of this Bamboo was cut down last year while in full flower. This clump almost immediately threw up a host of small shoots ranging in height from 1 foot to 4 feet, all of which seeded, and the plant is now apparently quite dead. A short time ago I was looking at a clump of *Arundinaria Simoni* that seeded last year, and the owner pointed out that it was not dead, as here and there a green leaf was visible. On examining these, however, we found undeveloped flower-buds immediately beneath them. From what I have seen up to the present, I have serious doubts of this Bamboo recovering when it has seeded on every culm. When at Fota at the end of May, numbers of fine specimens of *Arundinaria Falconeri* on the island were flowering, but the Bamboo grown there under the name of *A. nobilis* showed no sign of flower. *S. W. Fitzherbert.*

ALTHÆA FICIFOLIA.—A specimen of this plant has been cultivated in my garden for the last ten years. Last year I saw that there were red instead of yellow flowers on the plant; but as, according to Schkuhr, *Bot. Handbuch*, the plant sometimes produces flowers of a dark red colour instead of yellow, I took no particular notice, as the characteristic digitate leaves were present. This specimen is now flowering again, and is now nothing

else but *A. rosea*, the well-known Hollyhock. The flowers are rose not red coloured. I have no other Hollyhocks in my garden. *M. Buysman, Middelburg, Holland.*

ABNORMAL PHYLLOTAXIS OF ASH.—I send a photograph of a leader shoot of the common Ash (*Fraxinus excelsior*), which shows a $\frac{3}{8}$ spiral arrangement of the leaves instead of the normal opposite and decussate one. The shoot is one of four showing the same arrangement which I found in January last on the banks of the river Boyne, 2 miles or thereby below the town



FIG. 55.—ALTERNATE LEAVES IN THE COMMON ASH.

of Navan, in the county of Meath, Ireland. The plants from which the shoots were produced were growing in a clump of several hundreds, but I did not observe any of the others to have any but the normal arrangement. The plants were from 8 to 10 feet in height, and the strongest of the previous year's leader shoots showed growths of from 4 to 5 feet in length, the abnormal ones in no way differing from the others in this respect. Although abnormalities of the leaf arrangement are sometimes seen in the short, stunted shoots of old Ash trees, this is the first instance of the sort which has come under my observation in the case of young trees. *A. D. Richardson, Edinburgh.*

"GROWTH AND REPRODUCTION."—It comes as a sort of corollary to the opinions put forward by Professor Henslow on the effects of sowing large seeds for reproductive purposes, that it should recently have been urged that one reason for deterioration in Potatoes is due to the common practice of planting comparatively small tubers, or portions of large ones, in preference to whole large ones. That whole Potatoes do, as a rule, give better results than portions, is universally

admitted; the question as to the effect on the constitution of any variety of Potato, by continually planting the smaller rather than the larger tubers, seems not to have been determined. Doubtless the planting of small tubers ranging from 2 to 3 ounces, or the cutting up large ones into small portions, is practised chiefly as a matter of economy. The larger tubers can be sold profitably or consumed, but the smaller ones have except for planting purposes no material commercial value. It is worthy of note, as bearing on this subject, that very fine bulbs of Onions, or roots of Carrots, Parsnips, Beets, or similar products, when allowed to produce seed, invariably reproduce finer progeny than do those of lesser dimensions. Those growers who seek to improve Peas or Beans by selection solely, mark and save for seed the finest pods. It is matter for careful observation, needing to be continued over several years, to ascertain how far a stock may deteriorate or improve if every year small tubers only be planted in one case, and large tubers in the other. There is no need for experiment to show the evil effects of bad winter storage of tubers. That has done Potato stocks immense harm in the past, and will continue to do great harm so long as growers persist in doing what is so unwise and unnatural. Then, allied to this question of experimenting on the results of planting year after year large and small tubers, there is another point of exceeding interest that applies largely to seed-producing as well as to tuber-producing vegetables, and that is—what effects do change of soil and variations of climate produce? The subject opens up an almost illimitable range for experimenting, and there should be no better place in the kingdom for such work than the Wisley garden, with its fresh soil, clear, free air, and ample space. But the whole thing, which has greater value for horticulture than even the testing of new varieties of vegetables each year, needs to be done under the most continuous and careful supervision, both of scientific and of practical horticulturists. *A. Dean.*

GRADUS PEA.—When I wrote about Gradus Pea, I did not wish to institute a comparison with growers in favourable districts for early cropping of Peas. We cannot obtain Peas fit for use, so far as I know, in this part of England, before the last week in June, therefore your Essex correspondent will understand that I do not mean the precise date that they are fit, but the number of weeks that elapse between sowing the seed and gathering the pods. I gathered Peas on June 24, 1903, sown outdoors, and this year I was a week later, although I sowed a week earlier. To prove how quickly Gradus develops, I will give an illustration. I was told on May 28, that a large house party would be staying here about the first week in August, so on May 31 I sowed extra rows of Gradus, and on August 2 (nine weeks) I gathered a peck of full pods. My remarks did not refer to Peas sown under glass. I use Chelsea Gem for that purpose, which after planting out are covered with mats or bags. *J. G. Wilson, Chevel Park Gardens, Wakefield.*

— I have read with interest the articles on Gradus Pea, but with me Sutton's Giant came to perfection sooner than Gradus, as the latter, sown on March 15, was gathered on June 25, whereas Sutton's Giant, sown on March 23, was gathered on June 23, being about ten days less time than Gradus. Both varieties carried good crops of Peas, especially Sutton's Giant. Now that this interesting question on Peas has been raised, I should like growers to state their opinions on the merits of tall and short Peas, and whether the short varieties give such heavy and continuous crops as the taller kinds. *Devonian No. 2.*

THE CONGO FLORA.—We have received the second fascicle of a work entitled *Études de Systématique et de Géographie Botaniques sur la Flore du Bas et du Moyen Congo*. It contains 131 pages of descriptive text, and seventeen quarto plates. The botanical details are supplied by M. DE WILDEMAN, and the plates are executed by M. Menger. About seventy Orchids are catalogued, comprising several new species. The publication will be of great value to botanists.

FRUIT RETURNS FOR 1903.

THE official statistics of the Board of Agriculture for the year 1903 are interesting to all concerned with stocks and crops. As regards fruit-growing, the acreage of small fruits and of orchards is tabulated according to each county, so that the principal fruit-growing areas are seen at a glance.

The six counties showing the largest areas under cultivation are as follows, the figures representing acres:—

	Small fruits.	Orchards.
Kent	22,447	28,046
Hereford	746	27,604
Devon	1,414	27,214
Somerset	584	25,055
Worcester	4,294	22,072
Gloucester	1,590	20,324

The total area for England under small fruit is returned as 68,968 acres and 233,286 acres under orchards.

The Welsh totals are 1,230 acres of small fruits, and 3,748 for orchards.

Scotland claims 5,954 acres of small fruit and 2,449 of orchards, and the total for Great Britain is 76,152 of small fruit and 239,483 acres of orchards.

In addition to home-grown fruit, our markets are well supplied with produce from the colonies and from foreign countries, Apples being in greatest bulk and the United States our largest contributors, sending over 2,381,619 cwt. from a total (for foreign countries) of 2,828,328 cwt.

Still more important supplies come from British possessions. Australia sends 185,893 cwt. of Apples in all, of which 29,373 cwt. are from Victoria, 11,842 from South Australia, and 144,678 from Tasmania.

Canada contributes 1,545,455 cwt., the Channel Islands 9,861—all British possessions together sending in a total of 1,741,218 cwt. of Apples, and foreign and British (imported) sources together a grand total of 4,569,546 cwt.

AERIDES CRISPUM.

WE are pleased to be enabled to give an illustration (fig. 56) of a fine specimen of *Aerides crispum*, taken from a photograph of one which recently flowered with H. R. East, Esq., Sompting Abbots, Worthing, and Coorg, India, from which latter place the plant was doubtless imported.

That so beautiful an Orchid, once one of the reigning favourites in Orchid collections, and one of the most effective at exhibitions many years ago, should be slighted by Orchid collectors in our times, tells pointedly of the influence of fashion in flowers, and of the fickleness of those who are swayed by it. Whether a plant is a favourite or not does not affect the question of its beauty; although it practically rules the market value. A note of some of the prices realised at the sale of Mr. Cox's Orchids, in the *Gardeners' Chronicle*, July 10, 1847, p. 455, records that the plants of *Aerides crispum* then brought from £16 to £21 each; to-day probably they would not fetch so many shillings.

Aerides crispum has a wide range of habitat, generally at high elevations on the Western Ghats, India, and consequently there is some variation both in the habit of the plant and the quality of its flowers. The plant flowering with Mr. East, by its longer, narrower leaves, and large flowers, seems to be of the variety known as *Lindleyanum*. The species was first discovered by Wallich in Southern India, and flowered for the first time in 1841 in the gardens of Sir Richard Brooke, at Norton Priory, Cheshire, being then named *Aerides Brookei*. A more slender form is known as *A. crispum* Warneri.

Aerides of this class are not generally successfully grown in gardens; the chief reason of failure consists in their being kept too warm and

moist during the winter season, and not being allowed a proportionately cooler resting season at that time. Generally speaking these Indian *Aerides* would pass the winter in a cool-house or vinery better than in the Orchid-house. In spring they should be removed to warmer and more moist growing quarters, and kept growing until the resting season comes round again. The flowers, which are very fragrant, have the sepals and petals white, tinged with rose-purple at the back and tips of the segments. The base of the lip is white striped with purple, the front lobe amethyst-purple. It lasts a considerable time in bloom.

Cucumber-formed Melon.—Mr. ODELL also exhibited a variety of Melon with the form of a large Cucumber. The form comes true by self-pollination.

Watsonia with aerial corms.—Mr. Chittenden showed stems bearing axillary corms similar to the bulbils normally occurring on bulbiferous Lilies.

Bamboo flowering.—Mr. Bowles showed a flowering spray of *Phyllostachys Boryana* of a remarkably elegant character, being superior in this respect to many of the other Bamboos.

Plantains with foliaceous bracts.—Mr. Bowles also showed specimens of *Plantago major* and *media* in this not rare condition. They come true by seed. He also brought leaves and a flowering spike



FIG. 56.—AERIDES CRISPUM.

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

AUGUST 9.—*Present*: Dr. M. T. Masters, F.R.S., in the chair; Messrs. Odell, Chittenden, Saunders, Douglas, and Bowles; Revs. W. Wilks and G. Henslow, Hon. Sec.

Datisca cannabina, *Parthenogenesis in.*—Mr. ODELL showed female flowering branches with swelling ovaries; but as the pistil is protogynous, and the only male plant grew at a distance of a hundred yards, the fruit was apparently forming without fertilisation.

Proliferous Clover.—Mr. Odell also showed specimens of this not uncommon monstrosity, in which the carpels are virescent, the carpellary leaves being both simple and trifoliate.

of *P. maxima* from Greece of an almost gigantic size.

Apples Falling.—Mr. Dunlop, of Loughgall, writes as follows:—"With regard to the great 'dropping' of Apples, some kinds were very heavily 'set,' but very few remain, especially Royal Jubilee, which hitherto always sets well. Other kinds have fallen elsewhere, e.g., Lord Derby, but it is good here. The 'Queen' has also gone terribly, but that is their habit. It was noticed that bees were very scarce in the brightest days; would that have anything to do with the Apples falling off? Is there any list known of self-fertile Apples in this country? Is it true that some sorts fertile in one season might yet be sterile in another?" In reply to these questions Mr. Chittenden observed that from his experiments with both Apples and Pears, as a general rule they require to be fertilised by insects; but Stirling Castle, though usually self-fertile, was not so this year. With regard to

Pears it was the same, but Conference and Durondeau are both self-fertile. As the Apples referred to as dropping appeared to have been formed, it was thought that the great heat, acting upon heavy crops in an immature state, was the probable cause. It was not stated whether seeds were forming in the Apples or not.

White Melilot and Foxglove, produce of.—Mr. HENSLOW mentioned an instance of a seedling plant which accidentally appeared in his garden. It grew to a height of 5 feet, and bore some 300 racemes of various lengths. These were arranged into seven groups according to length, and the average number of the one-seeded pods in each group was ascertained by counting them on some half-dozen or more racemes taken at random. The total number of seeds was thus found to be about 15,660. Each plant required an area of 3 square feet, as the longest branches spread over a circle with a diameter of 2 feet; so that this one plant would have supplied enough seed for 1 acre and 380 square yards. In the case of a gigantic plant of a Foxglove, the number of seeds was approximately a million and a half.

TAUNTON DEANE HORTICULTURAL.

AUGUST 11.—The thirty-seventh annual show of this Society, held on this date, is said to have been the most successful ever held. Probably two dozen finer specimen plants in bloom have not been seen this season than those staged by Messrs. JAMES CYPHER & SON, of Cheltenham, and W. VAUSE, of Leamington, while in every other department of the show quality ranked high. A large tent was filled with the produce of cottage gardens.

The morning opened wet, but the weather improved before noon, and there was, as usual, an enormous attendance. It is obvious that, as the schedule of prizes contained 176 classes, requiring the services of twelve judges, only a few of the more salient points can be noticed.

Specimen Plants.—The class for twelve stove and greenhouse plants in flower brought three collections. Messrs. J. CYPHER & SON were placed 1st with three very fine *Staticea*, *Ixoras*, *Bougainvillea glabra* and *Sanderiana*, *Erica Maroccaniana*, &c. Mr. VAUSE came 2nd, with three large *Ericas*, *Ixoras*, *Allamandas*, *Bougainvillea*, &c. Mr. W. BROCK, Exeter (J. Rowland, gr.), was 3rd. With six specimens, Messrs. CYPHER and VAUSE were again 1st and 2nd. Mr. VAUSE was 1st with a group of plants arranged for effect; and Mr. BROCK was 2nd.

Some good flowering *Begonias* were staged by Miss HEALE, Taunton (W. Hayward, gr.). Single and double zonal *Pelargoniums* and *Fuchsias* were also shown; and two collections of six *Cockscombs*, which recalled the days when this old-fashioned flower was seen at its best.

Messrs. CYPHER & SONS took the 1st prize for four *Orchids*. They had the best new plant in a pale-coloured *Ixora*, and also the best new foliaged plant in *Croton Turnfordensis*. Several classes of specimen stove and greenhouse plants were shown. Foliage plants were also well shown in the open division. Ferns were also shown.

Hardy herbaceous and bulbous plants were numerous and in good character. Collections of Sweet Peas were numerous, especially in the class in which Mr. R. SYDENHAM offered special prizes. In the Amateurs' division the competition was equally keen.

Floral decorations were represented by some charming designs set up in two classes.

Fruit was of good character, though there were fewer collections than usual. With eight dishes Mr. J. W. FLEMING, Romsey (gr., J. Mitchell), was placed 1st with excellent Muscat of Alexandria and Madresfield Court Grapes, Peaches, Nectarines and Apricots, Figs, Apples and Melons; Lady ASHBURTON, Romsey (gr., J. Hall) was 2nd, also staging good fruit. With four dishes Lady ASHBURTON was 1st, and Col. SANDFORD, 2nd.

In the Amateurs' division very good stove and greenhouse plants were shown by Mr. W. BROCK and Col. SANDFORD, Mr. BROCK being placed 1st with twelve and six specimens, Col. SANDFORD taking the 1st prize with four. Mr. BROCK also had the best group arranged for effect. *Begonias*, Zonal *Pelargoniums*, *Fuchsias*, *Achimenes*, Ferns, *Coleus*, *Lilies*, *Caladiums*, *Cockscombs*, &c., were all shown in good character. In the open division, cut flowers were largely shown, and there was the best display of *Roses* seen here for a few years past. Mr. GEO. PRINCE, Oxford, was much to the fore, showing excellent blooms for the late period of the year. He was 1st for thirty-six and eighteen blooms, also for eighteen Teas, Messrs. J. JEFFERIES & SONS, Cirencester, taking the 2nd prizes in each class. Mr. PRINCE had excellent examples of Her Majesty, Frau Karl Druschki, Charles Lefebvre, Ulrich Brunner, Bessie Brown, Mildred Grant, Ben. Cant, and J. B. M. Camm. Show *Dahlias* in good character were staged by Mr. W. TRESEDER, Cardiff, who gained

the 1st prize for twelve blooms. Messrs. J. CRAY & SONS, Frome, were 1st with twelve Fancy *Dahlias*, also with six bunches of Single varieties and nine bunches of Pompons; Mr. W. TRESEDER coming 1st with six bunches of *Cactus* varieties, all being well shown.

Melons, Peaches, Nectarines, Apricots, dessert and culinary Apples, Pears, Plums (light and dark), Currants, and Gooseberries were all largely shown. Apples and Pears were somewhat undersized; purple Plums were in most instances small and unripe.

For *Vegetables*, in addition to special prizes offered by Messrs. Sutton & Sons and others, there were over thirty classes in which vegetables were shown by gardeners. The Vale of Taunton certainly favours the production of fine vegetables.

Trade exhibits of a miscellaneous character were numerous, and special awards were made to Mr. George Prince, for *Roses*; to Messrs. I. House & Son, Westbury-on-Trym, for *Phloxes*, *Delphiniums*, &c., a fine contribution; to Messrs. Blackmore & Langdon, Twerton, for *Begonias*; to Messrs. Kelway & Son, Langport, for *Gladioli*; to Messrs. Jarnan & Co., Chard, for cut flowers; to Mr. V. Slade, Taunton, for a group of *Roses*, and also for zonal *Pelargoniums*; to Mr. M. Fritchard, Christchurch, and J. H. White, Worcester, for hardy flowers; to Messrs. R. T. Veitch & Son, Exeter, for plants and cut flowers of a varied and interesting character; to Messrs. Child & Herbert, Acorns Green, for *Carnations* and *Picotees*; to Mr. W. B. Smale, Torquay, for *Dahlias* and other subjects; to Mr. W. Treseder, Cardiff, for *Cactus Dahlias*; to Mr. W. L. Pattinson, for *Violas*, &c.

BISHOPS STORTFORD HORTICULTURAL.

THE thirty-fifth annual show was held at The Grange, the seat of John Barker, Esq., amidst beautiful surroundings, and proved a great success.

For foliage plants, Col. ARCHER HOUBLON was 1st; Mr. GOLD 2nd; and the last-named was 1st for twelve plants, six foliage and six in bloom.

For groups of tuberous *Begonias*, a class that is of great interest in this district, Wm. SMITH, Esq., was 1st, having small plants but of splendid quality; Mrs. A. TAYLOR being 2nd.

Mr. JOHNSON was a good 1st for group of early *Chrysanthemums*; Mr. BARKER for *Fuchsias*.

The open class for twenty-four bunches of cut flowers was one that caused much interest, and the premier award was easily secured by Messrs. PAUL & SON, Cheshunt, they having splendid flowers; Mr. H. A. HARE was 2nd. For twelve bunches Mr. W. GEE was 1st; and Mr. G. GOLD 2nd.

In the classes for *Dahlias* Mr. BARKER was 1st for *Cactus*; and Messrs. GOLD, WATTS, and BARKER for *Pompons*.

Table decorations were a great feature; Miss H. M. CLAYDEN, Saffron Walden, being 1st; Miss A. F. HARWOOD 2nd.

Fruit was a special feature, and mostly of good quality. For a collection of fruit, Messrs. ARCHER HOUBLON and BARKER were the leading exhibitors, in the order named.

Vegetables made a grand display. For collection of twelve varieties, Mr. A. JEFFERIES was a good 1st; 2nd, Mr. J. BARKER.

The miscellaneous groups made a great display. That from Messrs. PAUL & SON was very telling.

Mr. MORTIMER, Farnham, had a magnificent collection of *Dahlias*, and received two First-class Certificates for new *Dahlias*.

Mr. JAS. DOUGLAS, Edenside, Bookham, received a First-class Certificate for a splendid *Carnation*, "Strongbow."

Messrs. BIRCH, Peterborough, had cut *Roses*; Messrs. RIVERS, Sawbridgeworth, a very fine lot of fruit-trees in pots; Messrs. RUSSELL, Richmond, staged a very choice group of foliage plants; Mr. PERRY, Winchmore Hill, herbaceous plants.

SHROPSHIRE HORTICULTURAL.

EXHIBITION AT SHREWSBURY.

AUGUST 17 & 18.

Wet Weather on the Opening Day.

Champion Grape Prize again awarded to Mr. Shingler.

SINCE the first exhibition was held under the auspices of this Society in 1875, increasing prosperity has followed the excellent management that has been practised. The Committee and its Secretaries, Messrs. H. W. Admitt and W. W. Naunton, soon learned that it would be impossible to hold successful exhibitions on a large scale in a country town like Shrewsbury, unless the means for providing the prizes could be obtained partly from a section of the public that is not specially interested in horticulture. The sports and high-class music that are provided each year in connection with the Shrewsbury Show are the means thus employed.

They are means rather than an end. The horticultural show is the chief object of the Shropshire Horticultural Society, and visitors to that show need have nothing to do with the "sports" unless they are so inclined, for they are held in a different part of the Quarry grounds. But such sports have an extraordinary amount of attraction for many people, and being held in conjunction with the flower show, they constitute such an event that thousands in the neighbouring counties, as well as in Shropshire, feel justified in making holiday in order to visit Shrewsbury. The attendance last year suffered on the second day from continuously wet weather. In 1902 the number of visitors was 75,000. The receipts last year were £983 19s. 9d. on the first day, and £1,357 on the second day. The entries this year amounted to nearly 3,000. The amount of prize money offered at the first exhibition in 1875 was £200, a very small sum compared with that awarded during the present week—£1,100. The event draws a very large number of professional gardeners to Shrewsbury, and on this occasion the number was larger than usual owing to an excursion from Scotland, which brought some to Shropshire who had never previously seen a Shrewsbury Show. The excursion, however, was not so popular as it was expected to be, the number coming by this means being little over a hundred.

The principal tents were lighted with electricity on the Tuesday night to enable exhibitors to continue their work during the night in cases where this was necessary.

There is, perhaps, no one circumstance capable to such a degree of marring a flower show held under the conditions of that at Shrewsbury, as wet weather. On the opening day rain began to fall as early as 5 o'clock in the morning, and it rained continuously until 1.30 P.M., increasing in degree.

When the judges commenced their duties at 10 o'clock there was a perfect deluge, and the rain being so heavy it found its way through the tents in countless places, wetting exhibitors, judges, and reporters indiscriminately, and blurring these notes as they were written.

The choice Grapes in the "Champion" class and the fruit generally suffered damage. As the plants and grass became saturated, there arose a mist in the tents that partly obscured the atmosphere. To attempt to move from one tent to another was almost the same as wading through the Thames would have been.

The attendance was much smaller than is usual on the opening day, but those people who did attend remained for the greater part of the time in the tents. There were nine tents, and the exhibition generally was as full and as good as ever.

FRUIT has been and still remains the most interesting feature at Shrewsbury, and the Grapes and hot-house fruits generally were capital, though in the special classes for Grapes in exhibits of two bunches there may have been rather fewer than on some previous occasions. Mr. Goodacre has again done exceedingly well, and the Champion Cup for Grapes has been won by Mr. Shingler, who also won it in 1902.

Messrs. JAS. CYPHER & SONS won the 1st prize for both groups of plants arranged for effect in the open classes. There were fine displays of cut flowers, including *Dahlias*, Sweet Peas, and most hardy species. Tuberous *Begonias* were grand, there being several honorary exhibits of these plants, as well as others in the competitive classes. The exhibits from members of the trade would have made a show in themselves.

VEGETABLES were as good as they are usually at Shrewsbury; no greater praise could be given them.

FRUIT.

TABLES ARRANGED AS FOR DESSERT.

The first class in the section for fruit was one for a dessert table, decorated with plants in pots, not exceeding 5 ins., cut flowers (Orchids excluded) and foliage. The tables measured 10 feet by 4 feet 6 ins. each. Not more than fifteen dishes of fruit were permitted, and exhibitors had to select these from a list published in the Society's schedule. Each table was covered with a white cloth, and the cut flowers, &c., were shown

in epergnes and vases, and as tracery. There were four exhibitors, and the 1st prize was gained by the Earl of HARRINGTON (gr., Mr. J. H. Goodacre), who had the best collection of sixteen dishes of fruit, and many other 1st prize exhibits.

The fruits shown by the Earl of HARRINGTON and the number of points awarded each dish will be seen in the following table:—

	Possible No. of Points.	Points awarded.
Apples	7	7
Figs	7	6½
Grapes (black)	10	7
" (white)	10	7
" (white)	11	7½
" (white)	10	7
Melons	8	7
"	8	7
Nectarines	8	6½
"	8	6
Peaches	8	6½
"	8	6
Pears	7	6
"	7	6
Plums	6	5½
Beauty of flower and foliage ...	8	6½
Harmonious blending of colour	10	8
General arrangement for effect	10	8

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The varieties were as follows: Grapes, Muscat of Alexandria and Madresfield Court; Apple, Ribston Pippin (excellent); Pears, Williams' Bon Chrétien and Souvenir du Congrès; Nectarines, Pineapple and Elrue Plum, Transparent Gage, Peaches, Royal George and another; also very fine Figs and two Melons. The decorations consisted of Schizanthus and Bridal Wreath (*Franea ramosa*), arranged in trumpet-shaped glasses, with a little green Asparagus, &c.; 2nd, GRANVILLE FARQUHAR, Esq., Eastnor Castle (gr., Mr. Mullins), who was awarded 116 points, and had a very pretty exhibit of choice produce; 3rd, the Hon. MEYNELL-INGRAM, Temple Newsam (gr., Mr. Dawes), who obtained 95½ points; and 4th, Mr. F. NEED, Great Malvern (gr., Mr. J. Jones), who obtained 91½ points.

COLLECTIONS OF FRUIT.

There were six exhibits in the class for a collection of sixteen dishes of fruit in sixteen distinct varieties, not fewer than twelve kinds, not more than two varieties of a kind. Each exhibit was shown in a space of 8 feet by 4 feet 6 inches. The 1st prize consisted of £16, and the remaining five classes were allotted £36. Each exhibit was relieved with suitable decorations of cut flowers, &c., but these constituted another competition, for which prizes were awarded. The 1st prize was won by the Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre). Of Grapes he had very long, heavy bunches of Muscat of Alexandria, scarcely so well coloured as usual; Chasselas Napoleon, also rather green; Black Hamburg, and Madresfield Court. Both of these Black varieties were better finished. There were two excellent Melons, Here of Lookinge and Countess; Peach Royal George, Nectarine Lord Napier and another, Figs Brown Turkey, Apricot Hemskirk and Morello, Plum Jefferson, Strawberry St. Joseph, Apple Gasconne's Scarlet, and Pear Souvenir du Congrès. The Apples were especially remarkable for large size and high colour, and the other fruits were of high merit. The 2nd prize was won by GRANVILLE FARQUHAR, Esq., Eastnor Castle, Ledbury (gr., Mr. G. Mullins). He had very fine bunches of Gros Maroc and Black Hamburg Grapes, moderate-sized bunches of Foster's Seedling and Muscat of Alexandria, also excellent Brown Turkey Figs, Stirling Castle and Bellegarde Peaches, Lady Sudeley Apple, Stanwick Elrue Nectarine, large Early Apricot, Melons, Cherries, Gooseberry Duke of Sutherland, &c. 3rd, F. CORBETT, Esq., Impney Hall, Droitwich (gr., Mr. F. Jordan), who had better-finished Muscat and other Grapes, of smaller size than those in the other exhibits already mentioned; very large Washington Apples, excellent Peaches, Moorpark Apricots, &c. 4th, J. DRAKE, Esq., Orford House (gr., Mr. J. Brown); and 5th, the Hon. Mrs. MEYNELL-INGRAM, Temple Newsam, Leeds (gr., Mr. R. Dawes).

The prizes for the decorations employed in this class were awarded as follows:—1st, F. CORBETT, Esq.; 2nd, Earl of HARRINGTON; 3rd, GRANVILLE FARQUHAR, Esq., and 4th, J. DRAKE, Esq. The object which

exhibitors should aim at in the arrangement of these decorations should be to obtain a bright effect, free from the least appearance of heaviness.

Collection of twelve dishes of fruit.—There were only two exhibits in this class for a smaller collection, and the 1st prize was awarded to Lord BIDDULPH, Ledbury (gr., Mr. J. Dawes). He had a very large, extremely heavy bunch of Black Alicante Grapes, the remainder of the Grapes being moderate in finish, but above the average in size. His Peaches and Nectarines were very good, and the remaining dishes above average quality. This exhibitor also gained 1st prize for the decorations. The only other exhibit was one from Mrs. F. NEED, Malvern (gr., Mr. J. Jones).

Collection of nine dishes.—Out of three exhibits in this class, the best was one from Mrs. SWAN, Halston Hall (gr., Mr. C. Roberts). The exhibit contained excellent Gros Maroc and Buckland Sweetwater Grapes, also Alexander, Noblesse Peaches, Lord Napier Nectarine, Late Duke Cherry, Moorpark Apricot, Brockworth Park Pear, The Peer Melon, and Monarch Plum, all of which were of choice quality. 2nd, C. F. K. MAINWARING, Esq., Ellesmere (gr., Mr. Chas. Wilkes), whose collection included two dishes of Peaches and two dishes of Nectarines, thus losing variety, there being no Cherries, Apricots, or Plums in the collection. 3rd, Rev. T. M. BULKELEY OWEN, Tedsmore Hall (gr., Mr. Langley). The awards for decorations in this class were won in the same order as the prizes for fruit.

CHAMPION GRAPE CLASS.

[1ST, MR. SHINGLER.]

(Silver Cup goes again to Norfolk.)

This contest is the third that has taken place for the magnificent Silver Cup, value £52 10s., which was illustrated in these pages in August, 1902. In the first year the Cup was won by the Marquis of Hastings (gr., Mr. W. Shingler), and last year by the Earl of Harrington (gr., Mr. J. H. Goodacre). It is necessary that the Cup be won three times before an exhibitor may claim it as his property. It is offered for the best collection of twelve bunches of Grapes. This must include four or more distinct varieties, and it is not permissible to show more than four bunches of any particular variety. The judges were instructed to judge each bunch on its individual merits, and award points. The maximum number of points allowed for the variety Muscat of Alexandria was 11; for each of the other varieties of black or white Muscat Grapes, and to Black Hamburg, 10 points; to any other variety of Grape, 9 points. The bunches were arranged on boards, and each exhibit was allowed a table space of 8 feet by 4 feet 6 inches in two tiers 2 feet 3 inches in width. Superior cultivation and "finish" were to be considered of the greatest importance. The conditions of this contest will be the same in future competitions for the Challenge Cup. Each collection of Grapes was decorated with flowers or foliage plants, but this was done to secure a good effect in the general show, and was not considered at all when awarding the prizes for Grapes. Instead of this, three additional prizes were awarded for the decorations, as has been the case formerly, therefore it happens sometimes that the exhibitor who secures the highest award for Grapes, gains only a 3rd prize for the decoration he has employed. On the occasion under notice there were five exhibitors in this class, and there were, consequently, sixty good bunches of Grapes. The 1st prize was, as has been stated, won by Lord HASTINGS, Melton Constable, Norfolk (gr., Mr. Shingler), who has thus won the Cup for the second time.

Bunch.	Variety.	Maximum No. of Points.	No. of Points obtained.
1.	Alnwick Seedling ...	9	8½
2.	Madresfield Court ...	10	9
3.	Muscat of Alexandria ...	11	11
4.	Muscat of Alexandria ...	11	11
5.	Madresfield Court ...	10	9½
6.	Black Hamburg ...	10	9½
7.	Gros Maroc ...	9	9
8.	Muscat of Alexandria ...	11	10
9.	Madresfield Court ...	10	9½
10.	Madresfield Court ...	10	10
11.	Muscat of Alexandria ...	11	9½
12.	Gros Maroc ...	9	9
Total ...		121	115½

From the table above given it will be seen that the collection shown by Mr. SHINGLER was very nearly perfect, for the judges awarded a total of 115½ points out of a possible 121 points. At the same time it may

be admitted that the judges' pointing was rather "high," to adopt the word used by exhibitors. Bunches No. 3 and 4, though awarded maximum points, were not, in our opinion, the best Muscats we have seen, nor the best ever seen at Shrewsbury, No. 4 especially lacking in "colour." But apart from this detail the collection was excellent. The Gros Maroc were perfect, Madresfield Court very nearly perfect, Black Alicante and Black Hamburg excellent. Mr. Shingler's collection was much better than the one which gained the 2nd prize. This was won by the Earl of HARRINGTON (gr., Mr. J. H. Goodacre), who obtained a total of 109½ points. In no single instance were the maximum points awarded to a bunch in this collection. The varieties were Muscat of Alexandria, Madresfield Court, Black Hamburg, Muscat of Alexandria, Cooper's Black, and Black Alicante. 4th, GRANVILLE FARQUHAR, Esq., Eastnor Castle (gr., Mr. Mullins), with 92½ points; and 5th, Hon. Mrs. MEYNELL-INGRAM, Temple Newsam, Leeds (gr., Mr. R. Dawes), with 76½ points.

The prizes for decorations were awarded as follows: 1st, GRANVILLE FARQUHAR, Esq.; 2nd, the Earl of HARRINGTON; and 3rd, the Hon. Mrs. MEYNELL-INGRAM.

GRAPES.

In addition to the Grapes shown in the Champion Class, and in the classes for collections of fruit, there is always a fine display of Grapes at Shrewsbury in classes arranged for special varieties, in most instances the exhibits being of two bunches each.

Four bunches.—The best exhibit of four bunches of Grapes, two bunches of a black variety and two of a white variety, was from Mr. T. LAMBERT, Oswestry, who had very large bunches of Muscat of Alexandria and Madresfield Court; 2nd, C. F. K. MAINWARING, Esq., Oteley, Ellesmere, who had Muscat of Alexandria and Black Hamburg; 3rd, Lord TREVOR, Brynk-walt, Chirk (gr., Mr. W. Dawes), with the same varieties. There were seven exhibits.

Black Hamburg.—There were as many as eleven exhibits of two bunches of this Grape, most of which were of first-rate quality. The 1st prize was won by the Earl of HARRINGTON, who had heavy bunches of deeply-coloured berries; 2nd, E. A. YOUNG, Esq., Tan-y-Bryn, Bangor; and 3rd, JNO. BRINTON, Esq., Moor Hall, Stourport (gr., Mr. W. H. Wilson). There were nine exhibits of single bunches of this first-rate black Grape, and the 1st prize was won by E. A. YOUNG, Esq., Tan-y-Bryn, Bangor (gr., Mr. A. Ruddock); 2nd, Lord TREVOR; and 3rd, GRANVILLE FARQUHAR, Esq.

Two bunches of Black Grapes.—There were three exhibits in this class, the 1st prize being won by Messrs. D. & W. BUCHANAN, who showed shapely bunches of Madresfield Court; 2nd, Earl of HARRINGTON, with rather small-berried bunches of Muscat Hamburg; and 3rd, E. A. YOUNG, Esq., with the same variety.

Madresfield Court (two bunches).—This most handsome of black Grapes was shown by five exhibitors in a class for two bunches, and the pair from Mr. T. LAMBERT, who was awarded 1st prize, were magnificent examples, being of good length, shapely, and possessing grand colour; 2nd, Lord HASTINGS, and 3rd, Earl of HARRINGTON.

Black Alicante (two bunches).—There were only two exhibits of this Grape, and the better of these came from Lord BIDDULPH; J. BAYLEY, Esq., Llanfair fechan (gr., Mr. C. Richardson), obtained 2nd prize.

Any other black Grape.—In this class there were ten exhibits, and the 1st prize was awarded to splendid bunches of Gros Maroc exhibited by C. F. K. MAINWARING, Esq. The size of bunch and berries in this case was remarkable, and the berries were perfectly coloured; 2nd, Lord HASTINGS, with the same variety.

White Muscats (two bunches).—The best exhibit of two bunches was one from the Earl of HARRINGTON, who had two moderately-good bunches of Muscat of Alexandria, very highly coloured; 2nd, J. BAYLEY, Esq., who had better bunches and better berries, but they were not coloured perfectly; 3rd, Lord BIDDULPH, with the same variety.

The best exhibit of a single bunch came from the Earl of HARRINGTON; 2nd, F. CORBET, Esq.

LOCAL CLASSES.

In a class for two bunches of Black Hamburg Grapes (open only to residents in Shropshire), Lord TREVOR won 1st prize, and C. F. K. MAINWARING, Esq., 2nd prize.

A similar class for Madresfield Court was won by Captain HEYWOOD LONSDALE, Shavington Hall, Market Drayton (gr., Mr. Jas. Mills); 2nd, Mr. T. LAMBERT.

Among classes restricted to residents in Shropshire there were further classes for Grapes, also for Apples, Pears, Plums, and for six dishes of hardy fruits, in all of which very good produce was exhibited, possibly owing in some measure to the good influence of the Society in the neighbourhood.

OTHER FRUITS.

Peaches.—There are always some good Peaches shown at Shrewsbury, and on this occasion there were eleven exhibits of single dishes of six fruits each in addition to the Peaches shown in the collections of fruits. The 1st prize was won by the Earl of LATHOM, Ormskirk (gr. Mr. B. Ashton), who had very handsome, richly-coloured fruits of very large size, the variety being Royal George; 2nd, Lord BIDDULPH, with Sea Eagle; and 3rd, Major CLIVE, Hereford (gr., Mr. R. Grindrod), with Belgarde.

Nectarines.—Nectarines were exhibited splendidly, and there were eleven dishes of six fruits each. The 1st prize was won by the Earl of SANDWICH, Huntingdon (gr., Mr. J. Barson), 2nd, the Earl of HARRINGTON, who showed Early Rivers, and 3rd, E. P. THOMPSON, Esq., Whitechurch, Salop (gr., Mr. W. A. Webster), who had the variety Lord Napier.

Twelve Gage Plums.—There were four exhibits in this class, three of which were very good. The 1st prize was won by Transparent Gage, from the Earl of HARRINGTON.

Twelve purple or red Plums.—There were seven exhibits. The variety Kirke's was awarded 1st prize as shown by the Earl of HARRINGTON; a dish of purple Plums from Mrs. SWANN, Halston Hall (gr., Mr. C. Roberts), obtained 2nd prize.

Cherries.—Single dishes were shown by eight exhibitors, the best being from E. A. YOUNG, Esq., Bangor.

Apricots.—There were as many as eleven dishes of six fruits of Apricots, and the fruits from Major CLIVE, who showed the variety Early Red, were excellent in size and quality; Lord BIDDULPH won 2nd prize; and the Earl of CHESTERFIELD, Holme Lacy (gr., Mr. Humphreys), 3rd.

Melons. There were three classes for Melons—one for green, one for white, and one for scarlet-fleshed varieties. In each of these classes a large number of competitors staged fruits, which were afterwards judged from the point of view of flavour, and three prizes awarded in each class.

GROUPS OF PLANTS ARRANGED FOR EFFECT.

One of the largest marquees at Shrewsbury is always furnished with magnificent groups of stove and greenhouse plants arranged to produce a good effect. At no exhibition are better groups of the kind shown than at Shrewsbury, and on this occasion they were as varied and interesting as ever. Class 4 was for groups of miscellaneous plants in or out of flower, arranged on spaces of 300 square feet each. There were four exhibitors in this class, but Messrs. J. CYPHER & SONS easily won 1st prize. The foliage plants were richly coloured, and were freely interspersed with delicate-tinted Cattleyas and other flowering plants; 2nd, G. H. KENRICK, Esq., Whetstone, Edgbaston (gr., Mr. Macdonald); 3rd, Mr. W. VAUSE, Leamington.

Group of Ornamental Foliage Plants, Palms and Ferns to occupy a space of 300 sq. ft. (flowers and plants in flower excluded).—Here again Messrs. J. CYPHER & SONS, of Cheltenham, secured the premier award. The principal colour in this artistically arranged group was furnished by Codieums, and relieved with Aralias, Palms, and Begonias; 2nd, G. H. KENRICK, Esq., Edgbaston (gr., Mr. J. V. Macdonald).

SPECIMEN PLANTS.

Fifteen Stove and Greenhouse Plants.—Not fewer than ten of these were to be in bloom. The 1st prize of £20 was secured by Messrs. J. CYPHER & SONS, Cheltenham, with well-flowered specimens of *Ixoras salicifolia*, *Williamsii* and *Duffii*, *Staticea profusa* and *intermedia*, *Dipladenia regina*, *Erica Marnockiana*, *Bougainvillea Sanderiana*, *Allamanda grandiflora*, *Rondeletia speciosa* major (past its best), *Codieums Sunset* and *Victoria*, and three Palms. 2nd, Mr. W. VAUSE, Leamington, with smaller and somewhat sparsely flowered plants.

Six Stove or Greenhouse Plants.—Messrs. J. CYPHER & SONS, Cheltenham, gained the 1st position with large

shapely specimens, including *Staticea profusa* and *intermedia*, *Ixoras Duffii* and *Williamsii*, *Allamanda nobilis*, and *Erica Austriana*; 2nd, Mr. W. VAUSE, Leamington Spa, who had three *Ericas*, *Bougainvillea Cypheri*, *Allamanda nobilis*, and *Codieum angustifolium*; 3rd, T. SUTTON TIMMIS, Esq., Cleveley, Allerton (gr., Mr. B. Cromwell).

Thirty Stove or Greenhouse Plants.—These were required to be shown in pots not exceeding 10 inches in diameter, and Orchids were not to be included. The 1st prize collection in this class, from Mr. LAMBERT, Oswestry, was a wonderful example of the gardener's skill. The most noteworthy examples were *Ixoras Duffii* and *Pilgrimi*, *Acalypha Sanderiana*, *Allamanda Williamsii*, and *Codieum Evansianum*; 3rd, Messrs. J. CYPHER & SONS; 3rd, T. SUTTON TIMMIS, Esq., Cleveley, Allerton.

A class for the best single specimen stove or greenhouse plant in flower only brought two exhibitors, of whom Messrs. J. CYPHER & SONS won 1st prize with an *Ixora*, and Mr. W. VAUSE 2nd prize with an *Erica*.

The best collection of four exotic Ferns was shown by T. SUTTON TIMMIS, Esq., who also showed the best group of *Caladiums*.

There was a class for thirty miscellaneous plants, in moderately small pots. These were of sizes most useful for use in decorations. The 1st prize was won by Mr. T. LAMBERT.

A new class was that for Cannas in pots, but the only exhibitors were Messrs. H. CANNELL & SONS, of Swanley, whose exhibits of these plants are so well known to readers of the *Gardeners' Chronicle*. The exhibit covered a space equal to 12 feet by 4 feet, and included nearly fifty varieties.

Some of the best tuberous-rooting Begonias were shown by Messrs. T. S. WARE, Ltd., Feltham, who obtained a 1st prize for six plants.

Excellent plants of a size suitable for the decoration of tables were shown by T. SUTTON TIMMIS, Esq., whose *Codieums* were particularly pretty and of high colour. There were *Gloxinias*, zonal *Pelargoniums*, and other flowering plants; also *Coleus*, *Codieums*, and other fine foliage plants in special classes.

The *Codieums* from Col. W. GORDON-PATCHETT, Shrewsbury (gr., Mr. J. Swain), were very finely grown plants, several feet high.

MESSRS. BULL'S SILVER CUP.

The Rt. Hon. Lord HOWARD DE WALDEN, Audley End, Saffron Walden (gr., Mr. James Vert), won a Silver Cup offered by Messrs. W. Bull & Sons, King's Road, Chelsea, London, for the best collection of six plants of species introduced to commerce recently by Messrs. Bull. The species shown were *Ceropegia Woodii*, *Dracena Victoria*, *Davallia lucida* (a very pretty Fern), *Heliconia illustris*, *Ficus radicans* variegata, and *Anemia rotundifolia*.

There was one other exhibitor.

CUT FLOWERS.

An important section of the display of cut flowers is that for exhibits of bouquets and other floral devices. They were staged in the large marquee containing the fruit, and commanded a large share of attention from the public.

In a class for a bride's bouquet and two bridesmaids' bouquets, Messrs. JENKINSON & SON, Newcastle, Staffs, won 1st prize. The bouquets in each case were composed of Orchids, and arranged in a light and pleasing manner; 2nd, Mr. JOHN GAULT, Kilmaleolm; 3rd, Messrs. FELTON & SONS, Hanover Square, London.

The best bride's bouquet was also shown by Messrs. JENKINSON; 2nd, Mr. W. J. GARNER, Altrincham; 3rd, Mr. JOHN GAULT.

For a bouquet of flowers for the hand (Orchids excluded), Messrs. JENKINSON also excelled all other exhibitors, having a lovely arrangement of *Odontoglossums*, *Oncidiums*, *Cattleyas*, &c.; 2nd, Mr. W. J. GARNER.

For a floral harp, the 1st prize went to Mr. W. TRESEDER, Cardiff, the principal flowers used being *Liliums*, *Stephanotis floribunda*, and *Pancratiums*, over a groundwork of white Asters. Pale-coloured *Cattleyas* and *Odontoglossums* gave a touch of colour at the upper corners, whilst the "threads" were composed of *Lilies of the Valley*. 2nd, Messrs. JOHN POPE & SON, King's Norton, Birmingham; 3rd, Messrs. FELTON, Hanover Square, London.

The best floral cross, not exceeding 4 feet high, was shown by Messrs. FELTON & SON; 2nd, Mr. W. TRESEDER.

Messrs. FELTON had also the best floral wreath; 2nd

Mr. W. TRESEDER; 3rd, O. ROBINSON, Esq., Alderley Edge (gr., Mr. John Nixon).

In a class for a basket of cut flowers for the drawing-room, O. ROBINSON, Esq., won 1st prize.

The best hand-basket of cut flowers (Orchids excluded) came from Messrs. FELTON & SON, who had *Carnations* and *Lily of the Valley*. 2nd, Mrs. M. E. JONES, Bieton; 3rd, O. ROBINSON, Esq. (gr., Mr. John Nixon).

HARDY PERENNIALS.

Collection of Hardy Perennials, Roses excluded.—The exhibits in this class were very good. 1st, Mr. MAURICE PRICHARD, Christchurch, Hants, had a superb collection of seasonable flowers, comprising excellent examples of *Montbretias*, *Coreopsis*, *Erigeron speciosus* major, *Crinum Powellii*, *Kniphofia* "Dr. Regel," *Delphiniums*, *Phloxes*, *Campanulas*, and *Glaadiolus princeps*; 2nd, Messrs. HARKNESS & SON, Bedale, Yorks; 3rd, Messrs. J. COCKER & SONS, Aberdeen; 4th, Messrs. G. GIBSON & CO., Leeming Bar, Bedale.

DAHLIAS.

Collection of Cactus or Decorative Dahlias.—There were five competitors in this class, and after a close contest Mr. W. TRESEDER, Cardiff, was awarded 1st prize; Mr. S. MORTIMER, Rowledge Nurseries, Farnham, 2nd; and Messrs. KEYNES, WILLIAMS & CO., Salisbury, 3rd prize.

For a collection of Dahlias of any varieties, Mr. W. TRESEDER was again awarded 1st prize; Messrs. J. CAMPBELL & SON, High Blantyre, N.B., 2nd prize; and Messrs. KEYNES, WILLIAMS & CO., Salisbury, 3rd prize.

There were numerous classes for Sweet Peas, the 1st prize in a class for which prizes were offered by Messrs. JONES & SON, Shrewsbury, was won by Mr. C. PEPLOW, Bieton Heath. In the class for which prizes were offered by Mr. R. SYDENHAM, the 1st prize was won by W. H. BANKS, Esq., Kingston. The winner of the 1st prize in Class 44, for which Mr. ECKFORD offered prizes, was won by Mr. T. JONES, Bryn Penylan, Ruabon, the collection shown including eighteen varieties.

For cut *Carnations*, Mr. W. B. W. VERNON WELSH, Frankton, Oswestry, won 1st prize; and in another class, Mr. A. R. BROWN, Handsworth, was 1st.

VEGETABLES.

Although some old well-known exhibitors of these garden products were absent, yet there was in most classes considerable and keen competition. The quality generally also was as usual excellent, and it is but fair to say of the best that it seemed to be quite unsurpassable. The exhibits from Aldenham Park and Ormskirk were, as may be anticipated, of the finest description; indeed, we have never seen Mr. E. Beckett in better form.

For the six valuable prizes offered by Messrs. Jas. Carter & Co., London, there were unfortunately but two competitors. These were Lord ALDENHAM, of Elstree, Herts (gr., Mr. E. Beckett), who had in a collection of nine kinds superb *Ailsa Craig Onions*, *Goldfinder Potatoes*, *Duke of York Tomatoes*, *Scarlet Perfection Carrots*, *Standard Bearer Celery*, *Autumn Giant Cauliflowers*, *Model Leeks*, good *Peas*, and handsome *Runner Beans*. The Earl of LATHOM, Ormskirk (gr., Mr. B. Ashton), was 2nd.

There were eight collections in the class for nine kinds of vegetables, valuable prizes being offered by Messrs. Sutton & Sons, Reading. Here Mr. E. BECKETT was again 1st, having solid white *Celery*, *Prize-taker Leeks*, *Perfection Tomatoes*, *Windsor Castle Potatoes*, *Ailsa Craig Onions*, *Mammoth Cauliflowers*, *New Intermediate Carrots*, *Best-of-All Runner Beans*, and *Duke of Albany Peas*, a superb sample; Mr. B. ASHTON was again 2nd; Col. R. MIDDLETON, Ross (gr., Mr. G. W. Smith) 3rd; G. D. FABER, Esq., Wallingford (gr., Mr. Jas. Dymock) 4th; Mr. G. W. BASTIN and Mr. C. WILKINS coming 5th and 6th.

Messrs. WEBB & SONS, Wordsley, Stourbridge, also offered liberal prizes for collections, but limiting them to six kinds of vegetables. Here Mr. ASHTON was a good 1st, having very fine exhibits, repetitions largely of those already named. Mr. Bastin, gr. to Sir A. HENDERSON, M.P., of Inscot Park, Berks, was 2nd, and Mr. W. Pope, gr. to the Earl of CARNARVON, Highclere Castle, Newbury, was 3rd. Other prizes were taken by Mr. BARSON, Hinchbrook; Mr. H. FOLKES, Hemel Hempstead; and Mr. F. J. BARRATT, Ellesmere.

The same firm's class for a dish of *Tomatoes* of specified varieties brought numerous exhibits, the fruits generally well coloured and of quite moderate dimen-

sions. Mr. J. WESTON, Hodnett, had the best; Mr. Folkes, gr. to the Right Hon. F. HALSEY, Hemel Hempstead, was 2nd; Mr. ASHTON coming 3rd, and Mr. READ, Brethly Park, 4th.

In the class for nine kinds, prizes given by Messrs. R. Smith & Co., Worcester, the competition was again good, Mr. BECKETT being again a good 1st with very fine quality. The varieties were chiefly repetitions of those already named. Mr. ASHTON was again a worthy 2nd; and an able Welsh competitor, Mr. R. A. HORSPOOL, of Ruabon, was 3rd. Other winners were Mr. JONES and Mr. G. DAVIES.

Mr. Edwin Murrell, Shrewsbury, had classes for eight kinds and six kinds. In the class for eight dishes, Mr. Townsend, gr. to J. B. ACKROYD, Esq., Chalfont Park, Bucks, was 1st with excellent exhibits; Mr. E. Jones, gr. to the Misses HOWELL, Rhwyport, 2nd; Mr. E. Walker, gr. to Sir W. HONYMAN, Coton, Whitchurch, 3rd; and Mr. Birch, gr. to Col. E. W. HERBERT, Orleton Hall, 4th.

Mr. J. Abbott, gr. to Mrs. GUISE, Hadnall, took 1st place in the smaller class.

SOCIETY'S PRIZES.

A class for twelve dishes, for prizes offered by the Committee, again brought Mr. BECKETT to the front with splendid products. It was, indeed, difficult to say of his remarkable exhibits which were the best, all being so very fine. Cucumbers, Parsnips, Turnips, and Beet helping to make up the extra dishes. Here Mr. BASTIN came a good 2nd; and Mr. HORSPOOL ran him close as 3rd. Potatoes were remarkably clean and good, Mr. ASHTON having the best three dishes; Mr. E. CUMBERBATCH coming 2nd; and Mr. W. POPE 3rd. For one dish of six tubers, Mr. A. DICKSON was 1st. With six Tomatoes, Mr. J. WESTON, Hodnett, was best; and for a brace of Cucumbers Mr. BARSON took 1st place, with long, handsome fruits. There was great competition in the class for a single dish of Peas, Mr. ASHTON having much the greenest and freshest. Mr. BARRETT showed the best heads of Cauliflower, and Mr. ABBOTT had the best Celery.

Some of the best competition in the show was for the prizes offered by Mr. R. SYDENHAM, of Birmingham, who had ten single-dish classes, beginning with two dishes of Peas; Mr. HORSPOOL being 1st with splendid Gladstone and Captain Cattle. With Runner Beans, Mr. FOLKES was 1st with a very handsome sample. Mr. HORSPOOL had the best Cauliflowers, and was also 1st with six quite beautiful Carrots. Major CLIVE, of Whitfield, had the best Parsnips. Mr. HORSPOOL stood 1st with Onions. Mr. READ had the best Tomatoes, Mr. HORSPOOL the same with Turnips, and Mr. FOLKES took 1st place with two handsome dishes of Potatoes. Then came a collection of eight kinds, made up from the foregoing, five prizes being offered, Mr. HORSPOOL again coming 1st with capital samples, and Mr. FOLKES was 2nd. Beyond the money prizes thus offered, Mr. Sydenham supplemented them with five others in valuable objects, according to the number of points won in his classes by the various competitors. Mr. HORSPOOL was an easy 1st with 60 points, Mr. FOLKES coming 2nd with 49, others being lower down.

There was, as usual, brisk competition in the Cottagers' vegetable classes, some of their exhibits practically equalling those of the gardeners in excellence.

HONORARY EXHIBITS.

We have said already that the non-competitive exhibits from members of the trade were of much importance. The principal collections are referred to below, but there may be others that were overlooked in the adverse circumstances in which these notes were necessarily taken.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea exhibited a group of fine foliage plants, relieved with a few plants in flower, including Orchids. There were finely grown and richly coloured Codiaums, including the varieties Warrenii, Sunshine, Emperor Alexander III., Reidii, etc., also Caladiums in variety, plants of Nephentes Mastersiana, N. Burkei excellens, N. mixta, N. Hookeriana, etc.; small groups of well-flowered Ixoras, greenhouse Rhododendrons, the new variety of Buddleia variabilis, known as Veitchiana, the handsome stove foliage plant Leca amabilis splendens, etc. Among Orchids there were choice examples in flower of Cattleya Dowiana, Lælio-Cattleya Lucelia, L. C. Dominiana var. Langleyensis (a variety with unusually richly coloured lip), Cattleya

Loddigesii, Cattleya Atalanta, Dendrobium fornosum, and Odontoglossums.

Messrs. PRITCHARD & SONS, Shrewsbury, showed a large group of Ferns in pots, including Gymnogrammas, Adiantums, Nephrolepis, and other genera; also a variety of cut flowers, arranged in silvered "Woodland" receptacles.

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, exhibited a magnificent group of ornamental foliage plants, in which Codiaums (some 3 feet high) were the brightest feature. Other excellent plants included Aralia Chabrieri, A. Veitchii gracillima, Dracæna Doucetii, D. Sanderiana, Anthurium crystallinum, and a number of Cordylines.

Messrs. HEWITT & Co., Solihull, Birmingham, contributed a group of cut flowers in which hardy herbaceous species were largely represented. A few bunches of Carnations, from plants in pots, made a good centre-piece to the exhibit.

Messrs. R. SMITH & Co., Worcester, arranged a very comprehensive collection of cut hardy flowers on the grass in the big plant tent, and at the back of the group were Bamboos, Liliun auratum, &c., in pots.

Messrs. THOS. S. WARE (1902), Ltd., Feltham, Middlesex, exhibited a group of tuberous-rooting Begonias, showing both double and single-flowered varieties of much merit.

From Mr. B. R. DAVIS, Yeovil Nurseries, Somersetshire, came a large number of double-flowered varieties of the same type of Begonia, but in this case cut blooms only were shown. We particularly admired the following varieties:—The Bride (white), The Queen (orange-coloured), Professor Lanciani (reddish-salmon), and Mrs. Moser (salmon-pink).

Messrs. LAING & MATHER, incorporated with Messrs. STUART & MEIN, Keiso, N.B., exhibited a group of flowers of varieties of Carnation.

Mr. J. H. WHITE, Worcester, exhibited a group of hardy flowers in variety, and a number of dishes of Apples.

Mr. H. ECKFORD, Wem, Shropshire, exhibited a grand lot of Sweet Peas arranged tastefully in glasses. All the best varieties were included about fifty—among which was Scarlet Gem, which was shown for the first time last year.

Mr. ROBERT EOLTON, Warton, Camforth, had also a collection of excellent Sweet Peas in great variety.

Mr. JOS. LAMBERT, Westmoreland Road, Southport, exhibited a collection of Carnations as cut flowers arranged in glasses.

Mr. A. F. DUTTON, Bexley Heath, Kent, made one of his splendid exhibits of Carnations; and Messrs. M. CAMPBELL & SON, High Blantyre, N.B., also staged Carnation blooms.

"HOBBIES," Ltd., Dereham, Norfolk, made a very extensive exhibit of Dahlias, arranged in vases built up into cones, with an abundance of Tamarisk mixed amongst them.

Mr. W. ANGUS, The Gardens, Penicuik, Scotland, exhibited Carnations and flowers of the new variety of Chrysanthemum maximum known as King Edward, which has frimbriated petals.

Messrs. JARMAN & Co., Chard, exhibited Roses, Dahlias, zonal Pelargoniums, cut hardy flowers, a few Apples, and a collection of vegetables.

Mr. JOHN FORBES, Hawick, N.E., sent an excellent display of hardy flowers, comprising about sixty varieties of Phloxes, forty of Pentstemons, and a large assortment of show, fancy, and self Carnations.

Messrs. DOBBIE & Co., Rothesay, had a collection of a hundred varieties of Violas and the same of Pansies, arranged in sprays, bunches, and on the orthodox show board. Of the Violas, Maggie Smith, Archie Grant, and Mrs. T. W. R. Johnston were particularly noteworthy.

From "BAKERS," Wolverhampton and Codsall, came a representative collection of show, fancy, and Pompon Dahlias; also sixty varieties of cut zonal Pelargoniums and a rich display of autumn flowers.

Messrs. ISAAC HOUSE & SON, Westbury-on-Trym, showed a large collection of Delphiniums, Kulphofias, Phloxes, and Pentstemons.

Phloxes were grandly shown by Messrs. GUNN & SONS, Olton, Birmingham, who had a hundred choice varieties, each represented by nearly a dozen large spikes, and displayed in large pans and jars. Le Siècle, Iris, Sylphide, Sheriff, Ivory, Adonis, Coquelicot, and Molère were particularly good.

Roses in pots and cut blooms were well shown by Mr. EDWIN MURRELL, Shrewsbury. The same exhibitor also had about two dozen spikes of large, richly-coloured Gladioli.

Messrs. WEBB & SONS, Stourbridge, made an effective display with Gloxinias, tuberous Begonias, Hollyhocks, and Sweet Peas.

Messrs. JONES & SONS, Shrewsbury, showed Sweet Peas largely and well; also Cactus Daldias, Carnations, and floral decorations.

Messrs. FELTON, Hanover Square, London, sent Lilies of the Valley, grown from retarded crowns, Lilliums, Chrysanthemums, Verbena Miss Willmott, and Cactaceous plants were also included in this group.

Mr. BONSKELL, Bosworth, sent a large group of hardy flowers, very crowded and indifferently set up.

Mr. V. SLADE, Taunton, Somerset, staged sixty-eight varieties of single and double zonal Pelargoniums arranged in bold bunches.

Messrs. W. & J. BROWN, Stamford, Peterborough, contributed herbaceous flowers, Carnations, Roses, and zonal Pelargoniums.

Sweet Peas were shown in immense variety and excellent condition by Mr. HAROLD D. GOLDEN, Moberley, and Mr. JOHN DERRBYSHIRE, Hale, Altrincham. The last-named also staged fine varieties of Carnations, and a bedding Lobelia with deep blue double flowers.

Mr. W. L. PATTISON, Cherry Orchard, Shrewsbury, exhibited sprays of a hundred varieties of Violas.

From Messrs. JOHN PEEB & SON, West Norwood, came a large and varied collection of Gloxinias.

Miniature conservatories filled with interesting and curious Cacti were shown by Mr. RICHARD ANKER, Napier Road, Kensington.

Mr. ALBERT MYERS, Sutton Lane, Shrewsbury, exhibited a grand lot of cut zonal Pelargoniums, arranged in bold, loose bunches relieved with ornamental grasses, Gypsophila, Ferns, &c. A number of zonal Pelargoniums in pots, Abutilons, and nicely coloured Colenches were also included in this group.

Messrs. DICKSONS, Chester, set up two large groups, one consisting of stove and greenhouse plants, and the other a representative collection of hardy flowers. Of the latter, Lilies, Gladioli, and Montbretias were unusually good.

A meritorious display of blooms of double Begonias (Tuberous), grown out-of-doors, was made by G. FITZ-HUGH, Esq., Plas Power, Wrexham.

A new zonal Pelargonium, named Souvenir de E. J. Creamer, with purplish-crimson single flowers, was exhibited by Mr. E. J. CREAMER, Station Road, Erdington.

Messrs. CLIBRAN & SON, Altrincham, contributed a very choice strain of Celosia pyramidalis in several colours.

Mr. JOHN E. KNIGHT, Wolverhampton, had a small semi-circular group of Codiaums and decorative Chrysanthemums.

Messrs. REAMSBOTTOM & Co., Geashill, King's Co., Ireland, made another of their characteristic displays of the St. Brigid Anemones.

From the KING'S ACRE NURSERY Co., Hereford, came hardy fruit consisting of Apples, Crabs, Plums, and Damsons. A few Roses and hardy flowers were also included, as well as about two dozen maiden Apple-trees laden with fruit.

Mr. A. J. BRUCE, Chorlton-cum-Hardy, staged a wonderful collection of Sarracenias, Dionæas, Darling-tonias, and Cephalotus follicularis.

The finest exhibit of Cut Roses came from Mr. GEORGE PRINCE, Longworth, Berks, whose varieties Frau Karl Druschki, Gustave Regis, Papillon, and Killarney were particularly good for the season.

OFFICIAL AWARDS.

The following Medals were awarded to contributors of honorary exhibits.

LARGE GOLD MEDAL.

Messrs. Jas. Veitch & Sons, Chelsea, London; Messrs. "Bakers," Wolverhampton and Codsall; Messrs. Dickson, Chester; Messrs. Jones & Sons Shrewsbury; Messrs. Jarmen & Co., Chard.

SMALL GOLD MEDAL.

Messrs. Clibrans, Altrincham; Mr. J. H. White, Worcester; Messrs. Isaac House & Son, Westbury-on-Trym; Mr. Albert Myers, Shrewsbury; Mr. E. Murrell, Shrewsbury; Mr. Geo. Prince, Longworth; Mr. A. J. Bruce, Chorlton-cum-Hardy; Mr. Robert Bolton, Camforth.

SILVER GILT MEDALS.

Mr. J. H. White, Worcester; Mr. L. R. Russell, Richmond, Surrey; Messrs. T. S. Ware, Ltd., Feltham; Messrs. R. Smith & Co., Worcester; Messrs. Hewitt & Co., Solihull, Birmingham; Messrs. Dobbie & Co.,

Rothsay; Messrs. J. Peed & Sons, London; Messrs. Webb & Sons, Wordsley, Stourbridge; The King's Acre Nursery Co., Hereford; Mr. Frank Bouskell, Nuneaton; Mr. Jno. Forbes, Hawick; Messrs. Gunn, Olton, Birmingham; Mr. H. Eckford, Wem; Mr. H. D. Goolden, Moberley; Mr. Vincent Slade, Taunton.

SILVER MEDALS.

Messrs. B. R. Davis & Sons, Yeovil; Messrs. Laing & Mather, Kelso; Messrs. Ian B. Dobbs & Co., Wolverhampton; Messrs. Felton & Son, Hanover Square, London; Messrs. Pritchard & Sons, Shrewsbury; Messrs. Reamsbottom & Co., Geashill, Ireland; Mr. J. Derbyshire, Altrincham; Mr. Jos. Lambert, Southport.

BRONZE MEDALS.

Mr. J. E. Knight, Tettenhall, Wolverhampton; Mr. R. Anker, Kensington; Mr. W. Angus, Penicuik, N.B.; G. Fitz-Hugh, Wrexham.

GARDENERS' DEBATING SOCIETIES.

KINGSTON GARDENERS' ASSOCIATION.—With the kind consent of Leopold de Rothschild, Esq., some thirty members of this newly-formed Society enjoyed a delightful visit to the gardens of Gunnersbury House and Park on the 11th inst. A wet morning was happily followed by a fine afternoon. The party was met by Mr. Hobbs (foreman) at Kew Bridge and conducted through the Potomac, the pleasure-grounds, fruit and plant houses, the Orangery, where Mr. Rothschild kindly provided light refreshments, thence through the grounds of the House-gardens, past the superb specimen plants in tubs on the terrace, the fine collection of Nymphaeas in the lake, and the Japanese gardens.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending August 13, 1904.

1904.	TEMPERATURE OF THE AIR.					TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.		
	At 9 A.M.		DAY.	NIGHT.	LOWEST TEMPERATURE ON GRASS.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.				
	Dry Bulb.	Wet Bulb.										
	deg.	deg.	deg.	deg.							deg.	deg.	deg.	ins.	hr. min.
AUGUST 7 TO AUGUST 13.	63	57	70	50					45	65	65	63	Tot 0.16	9 27
MEANS												

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 13, is furnished from the Meteorological Office:—

"The weather during this week was fair or fine over the kingdom as a whole, but rain was frequent, and sometimes heavy in the far north and north-west. Thunder and lightning occurred at Marchmont on Wednesday.

"The temperature was below the mean, the deficit ranging from 1° in the majority of districts to 3° in the Midland Counties. The highest of the maxima were registered, as a rule, during the earlier days of the week, and varied from 77° in England, S., to 67° in Ireland, N., and 65° in Scotland, N. The lowest of the minima, which were recorded as the week drew towards its close, were as low as 39° in England, S. (at Swarraton on Saturday), 40° in the Midland Counties, and 41° in Scotland, N., and E. Elsewhere they ranged from 42° in England, E. and S.W., to 45° in Ireland, S., and England, N.E., and to 49° in the Channel Islands.

"The rainfall was again more than the mean in Scotland, as well as in Ireland, N., and the Channel Islands, but less in the south of Ireland and throughout England. In Ireland the fall was just twice as much as the mean amount.

"The bright sunshine exceeded the mean in all districts except the Channel Islands. The percentage of the possible duration ranged from 63 in England, S., 61 in England, S.E., and 59 in England, E., to 39 in Ireland, N., and to 25 in Scotland, N."

THE WEATHER IN WEST HERTS.

One very cold night.—Since the recent spell of warm weather came to an end on the 10th, the temperatures have been generally low for the time of year. The highest reading in the thermometer-screen at no time exceeded 70°, and on the coldest night the thermometer

exposed on the lawn fell to 36°—a very low reading for so early in August. The ground is still slightly warmer than is seasonable at 2 feet deep, but is about 1° colder than the average at 1 foot deep. Rain fell on three days during the week, but the total measurement only amounted to about half an inch. This was not sufficient to affect even the bare soil percolation gauge, through which no measurable quantity of rain-water has now passed for more than a week. The sun shone on an average for 7½ hours a day, or for 1½ hour a day longer than is usual at this season. The winds were, as a rule, of moderate strength, and on one day the highest mean velocity for any hour reached 18 miles—direction W.S.W. The mean amount of moisture in the air at 3 P.M. exceeded a seasonable quantity by about 4 per cent. *E. M., Berkhamsted, August 16, 1904.*

MARKETS.

COVENT GARDEN, August 17.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Fuchsias, per doz.	2	0-4
Arbor Vitæ, per doz.	9	0-18	Hydrangeas, doz.	6	0-12
Aspidistras, per doz.	18	0-36	Lilium Harrisii, per dozen	4	0-8
Asters, doz. pots	3	0-4	— rubrum, doz.	6	0-9
Aucubas, per doz.	4	0-8	— candidum, per doz.	6	0-9
Balsams, dozen	2	0-3	Lycopodiums, per dozen	3	0-4
Begonias, per doz.	6	0-8	Palms, variety each	3	0-20
Campanulas	3	0-4	Pelargoniums, per dozen	4	0-10
Cannas	4	0-6	— double scarlet, per doz.	4	0-6
Chrysanthemums, per dozen	3	0-4	Pteris tremula, p. doz.	4	0-8
Cocos	12	0-18	Rose-trees, per dozen	4	0-10
Crotons, per doz.	12	0-24	Tropeolum, per dozen	3	0-4
Cyperus, per doz.	3	0-4	Verbena, per dozen	6	0-10
Dracenas, variety, dozen	6	0-18			
Eucynimus, vars., per dozen	4	0-10			
Ferns in var., per dozen	4	0-30			
Ficus elastica, per dozen	9	0-24			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen	1	6-2	Mushrooms (house) per lb.	0	9-1
Beans, Broad, per bushel	1	3-1	Onions, green, doz. bunches	2	0-2
— dwarf, p. sieve	1	6-2	— per bag	3	0-4
— Scarlet Runners, per bushel	4	0-6	— per case	4	0-4
Beetroot, bushel	2	0-2	Parsley, doz. bun.	1	0-2
Cabbages, tally	1	6-3	— sieve	0	9-1
Carrots, per doz. bunches	0	9-2	Peas, per bushel	6	0-7
— bag	4	0-1	Potatoes, per ton	75	0-100
Cauliflowers, doz.	1	6-2	Radishes, per dozen bunches	0	8-9
Celery, per dozen bunches	15	0-1	Salad, small, punnets, per doz.	0	9-1
Cress, doz. pun.	0	8-1	Shallots, sieve	0	3-1
Cucumbers, doz.	1	9-2	Spinach, p. strike	1	0-1
Endive, per doz.	2	0-1	Tomatoes, Chantenel Islands, per lb.	0	2-1
Garlic, per lb.	0	2-1	— English, doz.	2	6-3
Horseradish, foreign, p. bunch	1	0-1	Turnips, new, doz.	1	0-2
Leeks, 12 bunches	1	0-1	— bag	3	0-3
Lettuces, Cabbage, per dozen	0	9-1	Vegetable Marrows, per doz.	0	9-1
— Cos, per doz.	1	0-1	Watercress, per dozen bunches	0	3-0
Mint, doz.	2	0-1			

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, per doz.	2	0-6	Lilium lancifolium	1	0-2
Alströméria, doz.	3	0-4	Mallow, per doz.	2	0-3
Bouvardias, doz.	4	0-6	Marguerites, yellow, 12 bunches	0	9-1
Carnations, Malmaison, 12 blms.	0	8-3	Marguerites, white, dozen bunches	2	0-4
— per bunch	0	4-1	Orchids, various, per dozen	2	0-8
— doz. bunches	3	0-12	— Cattleyas	6	0-12
Chrysanthemums, dozen bunches	6	0-9	Pelargoniums, zonal, dozen bunches	3	0-6
Coreopsis, p. doz.	0	6-1	— white, dozen bunches	4	0-6
Dahlias, per doz.	3	0-6	— double scarlet, per doz. bun.	2	0-3
Delphiniums, per dozen bunches	2	0-3	Phlox	3	0-4
Eucharis, doz.	2	0-3	Pyrethrum, per doz. bunches	2	0-3
Ferns, Asparagus, per bunch	0	6-1	Roses, Mermet, per bunch	1	0-2
French, 12 bun.	0	3-0	— white, bunch	1	0-2
— Maidenhair, doz. bunches	4	0-6	— pink, bunch	1	0-3
Gaillardias, doz.	0	9-1	— red, bunch	0	4-1
Gardenias, box	1	0-2	— Safran, beh.	1	0-1
Gypsophila, doz. bunches	2	0-4	Scabiosa, dozen bunches	4	0-6
Gladiolus, white, doz. bunches	3	0-5	Smilax, 12 bunch.	1	6-3
— various, doz. bunches	3	0-6	Statice, 12 bunches	3	0-6
red, per doz. spikes	1	0-3	Stephanotis	1	0-2
Golden Rod, per dozen	3	0-4	Stocks, per dozen bunches	2	0-4
Heather, Scotch, per bunch	0	6-8	— Sunflowers	2	0-4
Honesty, bunch	1	0-1	Sweet Peas, per dozen bunches	1	0-2
Lavender	2	0-4	Tuberose on stem, bunch	0	9-1
Lilium auratum, per bunch	1	6-3	— short, p. doz.	0	2-0
— Harrisii, per bunch	2	0-4			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, Australian, in cases	7	0-8	Grapes, Gros Colmar, per lb.	0	10-1
— English, sieve	0	6-4	— Alicante, per lb.	0	8-1
Bananas, bunch	6	0-10	Lemons, per case	8	6-25
— loose, dozen	1	0-1	Melons, each	0	3-1
Blackberries, peck	3	6-1	Nectarines, A, per dozen	10	0-15
Figs, per doz.	1	0-4	— B, per doz.	2	0-6
Filberts, per lb.	0	4-1	Oranges, per case	15	0
Grapes, Hambro, A, per lb.	2	0-2	Peaches, A, per doz.	8	0-12
— B, per lb.	0	6-1	— B	2	0-7
— Gros Maroc, lb.	1	0-1	Pines, each	3	0-4
— Muscat A, lb.	3	0-4			
— B, per lb.	0	9-1			

REMARKS.—The Apple trade for home-grown fruit is very bad, prices ranging as low as 9d. per bushel for some consignments. Ecklinville Seedlings are of very good quality: Warner's King and Lord Suffield 2s. to 2s. 6d. per bushel; Quatrecens, 2s. to 3s. per sieve, Plums—Worcester Egg 1s. to 1s. 3d. per sieve; Victorias, 1s. 6d. to 2s. 6d. do.; Rivers' Czar and Orleans, 2s. to 2s. 6d. do.; Damsons, 1s. 6d. do.; Gages, 2s. to 3s. 6d. do. The supply of good Pears is short. Tomatoes, foreign crates 2s. 6d. each. Valencia Melons, 6s. to 9s. per case. The Carrots in bags, noted above, are washed.

POTATOS.

Various, home-grown, 70s. to 100s. per ton, John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

A GOOD supply of pot plants is still maintained. Several growers have started with Chrysanthemums, and some neat, well-flowered plants are coming in, although at present there is little trade for them. Asters in pots are plentiful and good; there are also a good many which have been lifted from the ground and packed in boxes. These latter seem to suit the hawkers, who are now the best customers in the market. Zonal Pelargonium Vesuvius is seen in well-flowered plants; also pink varieties and King of Denmark, but these plants sell slowly. Colons continue to be seen in quantities, but these have commanded a poor trade all the season. Campanula isophylla alba is now very good, and is seen in large quantities. These plants for market are trained in the same manner as Lobelias. The blue variety is not quite so plentiful. Fuchsias, Heliotropes, Verbenas, Hydrangeas, and Marguerites may still be had. Foliage plants are more plentiful. Cyperus alternifolius is seen in large quantities. Ficus elastica is good, also Ficus repens, Eulalia japonica, Asparagus Sprengeri, and Aralia Sieboldi. A good many hardy shrubs are seen, also hardy climbers of various sorts. Ferns are very plentiful in all sizes.

CUT FLOWERS.

Large supplies continue to come in. The supply of Asters from France is now more limited, but it has not yet stopped. English growers are now sending them in large quantities: the variety White Comet is good, and sells fairly well. Chrysanthemums are now coming in in larger quantities. Dahlias are also very plentiful. Carnations hold out well; also Roses. Sweet Peas also continue good. Gladioli, chiefly The Bride and Brencleyensis, continue plentiful; also Liliums and varieties of hardy herbaceous flowers. Statice Gmelini and its white variety, also other sorts, sell fairly well, on account of their lasting qualities. I have not seen Statice Suworowi in the market, but this, with its tall branching spikes of pink, which, when dried, keep a good colour for a long time, should make a useful market-plant. The Scotch Heaths (Erica tetralix and E. cinerea) are now seen in quantities, and seem to be much appreciated. There is little demand for choice flowers, but the trade for all ordinary bloom seems very fair for this season of the year. *A. H., Covent Garden, August 13.*

Obituary.

THOMAS BLAIR.—As we are going to press we receive intelligence of the death, in his eighty-seventh year, of our old correspondent, Mr. Thomas Blair, late of Shrubland.

ENQUIRY.

CAN any of our readers furnish a correspondent with information on the "Planet Junr." wheel hoes as a labour-saving machine for garden walks and kitchen-garden use. [Satisfactory. Ed.]

TRADE MEMORANDUM.

SINNINGIA REGINA.—Mr. Ernst Benary, of Erfurt, informs us that he has acquired the stock of this plant described on p. 87.

ANSWERS TO CORRESPONDENTS.

- AMERICAN OAK:** C. W. Most probably the damage to the trees has been caused by drought, and the fungus has appeared afterwards upon the dead tissue. There are grave doubts about the fungus having killed the trees. Are you sure that there is no white mycelium, like "spawn," at the roots? The black fungus is a black mould, like a *Toxula*, which only grows on dead and decaying wood and bark. M.C.C.
- APPLE ROT:** T. C. No trace of fungi; cause probably climatic.
- ASTER:** Warblington. Your plants are attacked by the Aster-worm, which we found in the interior of the stem near the collar. There is nothing to be done but to burn the plants.
- BILSTERED LEAVES:** J. P. We are puzzled to account for the appearances. Our entomological referee disowns them; our fungus expert will have none of them. We can only advise you to watch. To us they appear to be the work of some leaf-miner.
- BOOK ON APPLES:** R. P. Barron's *British Apples*, published by the Royal Horticultural Society, 117, Victoria Street, Westminster.
- BOOK ON TABLE DECORATION:** W. G. We know of no modern book on this subject. Old works are out of date and useless.
- CARNATIONS:** Woodland. A very good selection.
- CATERPILLAR:** J. S. The caterpillar of one of the Hawk-moths, perhaps *Sphinx ligustri*.
- CHRYSANTHEMUMS:** C. W. Yellow-rust. Burn the affected plants, or it will spread. Spray the healthy ones with liver-of-sulphur, $\frac{1}{2}$ oz. to a gallon of rain-water.
- EICHOENIA CRASSIPES:** A. E. F. A tropical plant floating on the surface of the water by means of its dilated, balloon-like, leaf-stalks. Occasionally the plants throw up a spike of blue flowers remotely resembling that of a Hyacinth, whence the name Water-Hyacinth. It may be grown in a glass-vessel in an ordinary greenhouse, and always attracts attention.
- ELM TREES:** H. R. G. The trees are probably attacked by one of the bark-boring beetles, but without seeing it we cannot say which one; neither can we suggest any remedy.
- GRAPES:** E. J. I. The berries are affected with the spot disease, due to a fungus (*Gloeosporium*). You can do nothing this year, but next season spray with liver-of-sulphur, half an ounce to a gallon of rain-water.
- INJURY TO LETTUCE ROOTS:** W. H. B. Two species of insects were present on the roots of the plants sent: (1) a root-feeding aphid (probably *Trama troglodytes*), (2) the larvæ of a small dipterous fly. But judging from the quantity of white powdery matter secreted by the aphids, we assume that the injury was due to these insects. If dry give the plants a copious supply of water and apply a slight dressing of artificial manure. If this treatment does not stimulate the plants try bisulphide of carbon (poisonous and highly inflammable), at the rate of two teaspoonfuls to each plant. To do this, keep all matches and lights out of the way, then pierce two holes in the soil, on opposite sides of each plant, half-an-inch in diameter and $1\frac{1}{2}$ inch deep, inject the fluid into them with a glass syringe, and close the holes immediately afterwards. The application should be made late in the afternoon, and a copious supply of water should be given the following evening. But seeing that your plants are in a weak condition, we would advise you to treat a few plants with the bisulphide in the first instance, and watch the result, as it is just possible that the plants may not be able to withstand the treatment.
- LILY DISEASE:** G. W. The Lily bulb arrived in such condition that it was impossible to arrive at any conclusion—the soil and bulb-scales all mixed together, so that no trace of fungus in the soil could be found. The scales of the bulbs turned brown in some parts, but no fungus disease could be detected. There was no sign of the Lily mould disease (*Gardeners' Chronicle*, September 10, 1881, fig. 66; August 18, 1888, fig. 21). With better packing some clue might have been discovered. No remedy can be suggested for a disease which cannot be found out. Is there any white mycelium or spawn in the soil? M. C. C.
- MALMAISON CARNATION:** C. T. We think your Carnation, Sir Horace Plunkett, is a very fine one. The colour is a rich deep scarlet, and the flowers have something of the fragrance of the old Clove.
- MILDEW:** X. Y. Z. Dust flowers-of-sulphur over the Vines with a suitable sulphurator, and smear the hot-water pipes with a mixture of sulphur and water. Avoid dusting the fruit as much as possible.
- NAMES OF PLANTS:** Correspondents not answered in this issue are requested to be so good as to consult the following number.—G. T. The shrub is *Lycocystis formosa*. The Orchid is an *Epipactis*, but it is out of bloom.—Belfast. *Melanthus major*.—M. M. *Phytolacca dioica*.—Carnation. We cannot undertake to name them. Perhaps someone who makes these plants a specialty might be able to assist you.—F. C. 1, *Sedum kamtschaticum*; 2, *Spiraea venusta*; 3, *Sedum pulchellum*.—L. F. S. A light form of *Cattleya Warscewiczii*, often called *C. gigas* in gardens.—Dr. B. *Hippeastrum robustum* is a synonym of *H. aulicum*, with which species your specimen agrees.—G. Y. P. 1, *Gongora portoricensis*; 2, *Phyllanthus nivosus*; 3, *Asplenium marinum*; 4, *Polypodium nigrescens*; 5, *Woodwardia orientalis*; 6, *Selaginella Willdenovii*.—A. R. 1, *Adiantum macrophyllum*; 2, *Asplenium lucidum*; 3, *Polystachya pubescens*; 4, *Oncidium candidum*; 5, *Pleurothallis rubens*.—G. B. M. R. *Vincetoxicum officinale*.—B. K. 2, *Sedum spurium*. There are no leaves to the Aconite, but we believe it to be *A. japonicum*. Do not forget its extremely poisonous nature.—A. L. H. 1, *Abelia triflora*.—X. Y. Z. 1, *Asclepias curassavica*; 2, *Calceolaria pinnata*; 3, *Festuca ovina*; 4, *Adiantum macrophyllum*; 5, *Pteris crenata*. The Ferns have probably been injured by thrips.—Iris. 1, *Echinops Retro*; 2, *Gnaphalium margaritaceum*; 3, we cannot name the Rose.—H. M. C. *Saponaria officinalis*.—J. L. G. 1, *Veronica*, next week; 2, *Erica Tetralix*; 3, *Veronica*, next week; 4, *Senecio Jacobaea*; 5, *Calluna vulgaris*.—J. B. *Inula Helenium*.—H. M. 1, *Tsuga Sieboldi*; 2, *Ilex aquifolium* var. *latifolia*; 3, *Berberis*, probably *vulgaris*.—R. A. *Cyananthus lobatus*.—M. C., *Rothsay*. 1, *Veronica virginica*; 2, not recognised; 3, *Gnaphalium orientale*.—R. H. 1, *Spartium junceum*; 2, *Escallonia macrantha*; 3, *Gaultheria Shallon*; 4, *Viburnum opulus*; 5, *Diplopappus chrysophyllus*; 6, *Spiraea callosa alba*; 7, *Hippophae rhamnoides*; 8, *Ruscus racemosus*; 9, *Thuopsis dolabrata variegata*; 10, *Cupressus nootkaensis* var.; 11, *Symphoricarpos racemosus* var.; 12, *Inula Helenium*. You encroach on our good nature by sending more than six; a small contribution to the Gardeners' Orphan Fund would be an acceptable compensation.—J. W. L. 1, *Cyrtomium Fortunei*; 2, *Cyrtomium falcatum*; 3, *Blechnum occidentale*; 4, *Doodia caudata*; 5, *Adiantum Waltoni diffusum*.—Anxious. 1, *Tecoma jasminoides*; 2, *Phyllanthus nivosus*.—E. A. T. 1, *Odontoglossum Hunnewellianum*; 2, a light form of *Oncidium Gardneri*, or a natural hybrid of it.—A. W., Newark. *Crinium giganteum*, but with smaller flowers and longer tube than usual.—A. B. We cannot name garden Coleus; the specimens should be matched with named varieties in other collections.—M. G. Sandford. The red-leaved specimen is *Prunus cerasifera* var. *atropurpurea*; the others are *Prunus cerasifera* (typical). The fruit is edible.
- NECTARINES:** Head Gardener. In the one case the fruits have grown unequally—too fast in the interior, and not in accord with the skin. It is probably a fault inherent in that particular tree. Cut it hard back, and try again next season.
- PEAS:** G. W. The purple-podded Pea. There is no other name for it.
- PITCHER ON CABBAGE-LEAF:** R. D. See our number for July 2, p. 10.
- PLUMS:** G. B. Both fruits are Cox's Emperor.
- POTATO TREATISE:** C. P. Yes, they do. Write to the firm for particulars.
- PRUNUS PISSARDI:** F. C. H. The fruiting is not at all unusual.
- ROSE:** F. W. B. Why address the publisher on such a question? The Rose appears to have died of old age. There is plenty of fungus-spawn on it, which may have accelerated the decease.
- ROSE RUST:** M. H. Spraying with diluted Bordeaux-mixture or ammoniated carbonate of copper solution at intervals during summer will check the disease. See p. 352, May 28, 1904.
- SWEET PEA, BICOLOR:** J. P. sends a specimen with one white flower and one rose-coloured on the same raceme. Such instances are not uncommon in Roses, Carnations, and Chrysanthemums, but we do not remember to have seen such a condition before in the Sweet Pea. Perhaps it is due to a separation of previously mixed features.
- THISTLE:** T. H. Apparently the common Thistle, *Carduus arvensis*, growing very luxuriantly. Nothing but thorough soil-cultivation will get rid of it. Burn every scrap.
- TOMATO: St. Albans.** The truss is certainly very large, but we doubt if it constitutes a record. Send further particulars when you have recorded them.—D. J. Your plants are affected with a fungus, *Cladosporium fulvum*. Burn the affected parts, and syringe those not yet attacked with weak Bordeaux mixture or liver-of-sulphur half ounce, rain-water one gallon.
- TOMATO MOULD:** Constant Reader. The brown mould, *Cladosporium fulvum*, occurs on the foliage of Tomato. It may be cured by application of Bordeaux-mixture and fresh air, or change of temperature. The *Peronospora*, also on the foliage, is a white mould, not so common, but quite distinct, and difficult to treat. The black spot on the fruit is *Macrosporium*, for which there is no remedy when once the fruit is attacked. Destroy all diseased fruits at once to prevent spreading. M. C. C.
- TOMATO-WILT:** W. W. & Co. This is evidently a form of Tomato-wilt, although at present no trace of fungi can be found. The disease appears in the stems, and the plant in time collapses. The roots appear to be perfectly healthy. The ultimate cause has not yet been discovered, and of course no remedy can be suggested until the true cause is made known. Bacteriosis is the only suggested cause, but perhaps that is merely a scapegoat to cover ignorance. M. C. C.
- VERBENA:** Constant Reader. The Verbenas should be wintered on a greenhouse shelf near the glass. It would be better to strike a batch of cuttings now, and winter them in the store pots. Also take up some of the old plants a little later, and pot them up and winter them. This will give two chances of obtaining a sufficient stock to propagate from in spring. The plants should not be watered overhead, and sparingly watered in the pots in cold, dull weather.
- VINES:** Reader, H. McC. We can find no insect nor any fungus. The balance of growth has been upset by some cause which you can tell better than we. Some of the berries are shanked, the shanking being caused by a fungus attacking the stalks.—H. B. The leaves are ripening prematurely. The Vine does not like the conditions that suit the Muscat. Try the Vine next season in some other house. There is no fungus nor any insect.
- VINE WEEVIL:** Perplexed. You can do nothing better than trap them with pieces of Potato, Carrot, &c. Insert the pointed end of a flower-stake into the Potato, &c., and just bury the latter in the soil. The stake indicates the position of the trap, and is useful for withdrawing it. They feed only at night, which is the best time to hunt them.
- COMMUNICATIONS RECEIVED.**—P. W. B., St. Louis—A. H.—A. H., Lewisham—J. O., Hfracombe—W. H.—Wesley & Son—C. B.—G. M.—S. W. F.—C. R.—Messrs. Fradelle & Young—Ben Reid & Co.—J. Rashleigh—J. R. C.—W. J. G.—A. L. H.—W. T.—J. S.—S. C.—T. H.—J. Gregory (photos)—Dr. Bonavia (photo)—E. B. (photo)—F. C.—T. B.—T. S. W. & Co.—Didcot—Ophir—S. P.—H. McC.—A. H.—P. B.—F. M.—J. C.—R. H. P.



ANGRAECUM INFUNDIBULARE; FLOWERS WHITE.



THE

Gardeners' Chronicle

No. 922.—SATURDAY, August 27, 1904.

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THE MANAGEMENT OF
HEDGES.

THOSE who have experienced the advantage of hedges in gardens as wind-breaks and protectors to vegetation generally need not to be reminded of their good qualities. But hedges possess in their roots a possible source of harm to the plants their tops are benefiting, by robbing them of their means of existence; and this supplies a very powerful reason why hedges are less frequently planted in gardens than they might be. This objection is not an insurmountable one. In the gardens wherein these notes are written there are now quite a thousand yards' run, a great part of which affords protection to flowers, and at the same time acts as a screen to the vegetable quarters. It would, of course, be impossible to cultivate either flowers or vegetables to any degree of per-

fection where the roots of, say, a Yew from a tall, broad hedge obtains free access to the soil on either side. But such a condition is altogether unnecessary. The simple process of root-pruning biennially checks soil-exhaustion beyond certain limits. Some may be horrified at the idea of what they consider root-mutilation; but the injury is limited, for if a hedge, say, four feet broad has a protected rooting space on one side of four to five feet, which will be covered by the hedge itself and a necessary alley, it may on the other and more important side have the roots restricted to a space equal in horizontal area to the perpendicular face of the hedge. If the soil is of good quality, vegetation will proceed uninterruptedly in good condition for an indefinite period. Where, however, the soil is poor, an occasional application of cow-manure is beneficial. Some hedges in soil of a satisfactory quality, and in position where root-pruning has not been needed, have made less progress than those that from the first have been regularly root-pruned. Of course it entails labour, as the soil to the depth of a spade has to be completely removed. Beneath that the roots can be cut to their utmost depth by pressing the spade deeply into the soil athwart the direction in which the roots are growing. But to set against that, while the shoots are produced very much more thickly they are less strong, and therefore trimmed more easily and rapidly.

The proper maintenance of hedges under any circumstances entails no small amount of labour, but by cutting at the right season, while the growth is soft, labour is considerably lessened as compared with that which is required to cut hardened growths. Moreover, winter or spring-cut hedges frequently bulge out at the top and look unsightly all the year. The same thing may, of course, happen by cutting in August, but at that time the fault is more easy to remedy, and early autumn trimming produces a neat hedge during the greater part of the year—autumn, winter, spring, and part of summer. This cannot be said to be the case with pruning deferred to winter or spring. The gaps caused by the death of plants are always annoying in connection with hedges newly planted. The cause of death is due either to the employment of badly-rooted plants, or of those that have been left unchecked at the root too long previous to lifting. It is a commendable practice to grow on plants a year or two previous to lifting, when they will be in a condition to transplant without ulterior losses almost any day of the year. Hedges may be as successfully planted in midsummer as at any time, and that is a suitable season to transplant any subject, but especially evergreens, at the moment new growth is commencing.

With regard to pruning hedges that have not acquired their desired proportions, it is a fact that nice young stuff left to itself for some years with the minimum of pruning will progress more rapidly than if closely pruned. In the case of Hollies this does not matter, and is perhaps the preferable method to adopt, but with Yew, which is the best of all hedging material, a hedge allowed to grow largely untrimmed is not so strong, so close, or so pleasant to look upon as one that is pruned regularly. B.

NEW OR NOTEWORTHY PLANTS.

COCHLIODA BRASILIENSIS, Rolfe, n.sp.*

AFTER having been known for upwards of thirty years, this interesting Brazilian species of Cochlioda is now put into commerce by M. Binot, who has imported it from Brazil. It has hitherto been known from a dried specimen collected near Rio de Janeiro by W. Longman, and communicated to Kew in May, 1872. Now a plant from M. Binot's importation has flowered in the collection. It differs from all the other species of Cochlioda in having greenish segments, but agrees in having the stalk of the lip completely adnate to the column and the blade reflexed, and, of course, in habit and other structural details. On account of its modest colour it is much less showy than its allies, but it is interesting as an outlying species of the genus, for the six species hitherto described are all natives of the Andes. A technical description is appended,* chiefly drawn from the living plant, which has much larger flowers than the other, being better developed. R. A. Rolfe.

WISTARIA INVOLUTA, Sprague (sp. nov.)†.

This new Wistaria (Millettia of the *Flora Australiensis*) has been lately in flower in the Temperate-house at Kew, where it has climbed beyond the gallery, and produced its racemes of pale purplish flowers more than 40 feet above the

* *Cochlioda brasiliensis*, Rolfe.—Pseudobulbs tufted, oblong, compressed, 1–1½ inch long, with a pair of short basal sheaths at the base, diphyllous at the apex. Leaves oblong-lanceolate, acute, somewhat recurved, 2½–5 inches long. Scapes borne from the axils of the bracts, erect or arching, and very slender, so that the upper part becomes pendulous when long, 5–10 inches long, simple, or with a side branch at the base when strong, 6–13 flowered. Bracts lanceolate, acute, 3–4 lines long. Pedicels slender, 4–8 lines long, dusky-brown. Sepals spreading, narrowly lanceolate-oblong, acute, at length revolute at the sides, 5–8 lines long, light green with a slight suffusion of olive-brown. Petals lanceolate, acute, slightly shorter and broader than the sepals, but otherwise similar. On the back of the segments the brown is more pronounced, especially along the middle, the colour extending from the pedicels. Lip adnate to the column for nearly 3 lines, the union being an extension of the keels; limb three-lobed, sharply reflexed just beyond the middle; side lobes with reflexed margins, broadening upwards, then abruptly narrowing just beyond the flexure; front lobe deltoid-oblong and apiculate; disc with a pair of fleshy keels, and a small pubescent tooth on either side just above the junction with the column; throat bearing a mass of short yellow hairs. Colour of lip white tinged with green on the front lobe, and with faint purple at the apex of the keels. Column 4 lines long, whitish, with a pair of minute lateral teeth near the apex; anther-case tinged with green; stigma with a bright yellow line in front. Native of Brazil.

† *Wistaria involuta*, Sprague.—Liana lignosa ultra 40-pedalis, basi 1½ poll. diametro, ramis teretibus, novellis ut foliorum rachides inflorescentiaque patenter ferrugineo-pubescentibus. Folia 6–10 poll. longa, 5–6-juga, petiolulis 1–2 lin. longis, lamina elliptico-ovata, retusa, basi rotundata vel subcordata, 1–2½ poll. longa, 8–18 lin. lata, supra nitida minute reticulata, venis pubescentibus exceptis glabrescens, subtus pallidior venis conspicue ceterum sparshusculis pubescente, venis secundariis utrinque circa 5–7. Racemi in axillis 2–3 superioribus orti, 5–6 poll. longi, rachide nodoso, floribus pluris (6–9) nodis fasciculatis. Calyx basi bracteolis 2 oblongis rotundatis ½ lin. longis, obconico-patelliformis truncatus 1½ lin. longus, ore 2 lin. diametro, margine involuto (in gemma campanulatus, 1½ lin. longus), ut pedicelli bracteolæque longe ferrugineo-pubescentes, obsolete 3-denticulatus, denticulis duobus posticis nullis. Corolla albedo-purpurea, apice excepto glabra; vexillum prope basin viride, suborbiculare, 4½ lin. latum, fere 4 lin. longum, margine incurvo, apice extra parce pilosum, ungue crasso incurvo ¾ lin. longo; alæ oblongæ, basi truncatæ, 3½ lin. longæ, 1 lin. latæ, omnino glabræ, carinae leviter adherentes, ungue 1½ lin. longo; carinae petala supra medium antice connata, breviter cymbiformia, basi truncata, 3 lin. longa, vix ultra 1½ lin. lata, apice præcipue extra dense pilosa, ungue 1½ lin. longo. Stamina diadelphica, filamenta vexillari ceteris medio levissime adherente, antheris uniformibus ¾ lin. longis, filamentis alterne inaequalibus. Discus 8-lo-batus, ¼ lin. altus. Ovarium compressum, 3¼–4 lin. longum, sericeum, stylo 1½ lin. longo subglabro, stigmatibus capitato.

ground. It is first branched about 5 feet from the ground and again higher up, some of the branches twining round the parent stem, a not uncommon occurrence in lianes. The plant has been in cultivation at Kew for about twenty years, but has never previously flowered. It comes from the Richmond River district of New South Wales, where *W. megasperma* has also been collected. The present species is the fourth known from Australia, the others being *W. Maideniana*, *W. pilipes* (Bail.), and the above-mentioned *W. megasperma*. That such a large woody climber should have remained unnoticed up till the present time shows how much of the Australian flora is still unknown, even in the older colonies.

It will be noticed that we have departed from the nomenclature of the *Flora Australiensis* in placing all the Australian species under *Wistaria* rather than *Millettia*. This was first done by Baron von Mueller, who has been followed by Moore and Betche in their *Handbook of the Flora of New South Wales*; and there can be no doubt that the Australian species are more nearly allied in floral structure (especially that of the androecium and disc) to the North American, Japanese, and Chinese species of *Wistaria* than to the Indian species (*M. rubiginosa* and *M. splendens*), on which the genus *Millettia* was founded by Wight and Arnott. Whether or not the entire genus *Millettia* will have to be sunk in *Wistaria* must be left for decision to the future monographer of Leguminosæ, but in any case it is to be hoped that Rafinesque's name *Phaseoloides*, revived by Otto Kuntze in a slightly modified form, will not be adopted by botanists.

How nearly many of the genera of Leguminosæ approach one another may be realised by referring to Bentham's descriptions of *Millettia*, *Wistaria*, and *Lonchocarpus*, in the *Genera Plantarum* and *Flora Australiensis*. *Millettia* appears to differ from *Wistaria* only in having a "hard, usually flat or thick pod not opening so readily"; while *Lonchocarpus*, which is actually placed in a different tribe, seems to be nothing but a *Millettia* with indehiscent fruits; but this is one of those defects inseparable from any linear arrangement of living organisms. T. A. S.

THE ST. LOUIS EXHIBITION.

AMONGST the many attractions to horticulturists at the exhibition now being held at St. Louis, not the least is the garden surrounding the French national pavilion. It covers an area of about 13 acres, and is laid out in the semi-formal style followed by many modern French landscapists. The pavilion is a copy of the Grand Trianon, and the garden has been made to harmonise well with the architecture of the building.

Entering on the east through the massive iron gates from University Boulevard, a broad driveway leads direct to the pavilion. Running up the centre of the drive, and dividing it in two are two grass plots, in each of which is a bed planted with *Gladiolus*. Good specimens of *Magnolia grandiflora*, exhibited by Louis Leroy, Angers, are planted on each side of the road, and between the *Magnolias* stand reproductions in plaster of vases in the park at Versailles. To the left of the drive is a figure of a lion in stone, standing in a bed of Tea Roses, shown by Ponce et Fils, Nogent-sur-Seine, and to the right is a human figure in white marble, surrounded by a mass of *Hydrangea paniculata grandiflora*, giving to this part of the garden a very ornate appearance. In the south-east corner of the garden are extensive exhibits of espalier Apple-trees, sent by the well-known houses, Nombrot Bruneau, Bourg la Reine, and Croux et Fils, Chatenay. As trained fruit-trees are not familiar in St. Louis, these attract great attention from the visitors. The last-named firm also has a large exhibit of

ornamental trees and shrubs, including *Rhododendrons*, *Magnolias*, *Bambusa viridi-glaucescens*, *Cornus brachypoda*, and some splendid pyramid specimens, 12 to 14 feet high, of *Prunus Pissardi* and *Ilex Aquifolium marginata alba*. In Conifers, they show nice plants of *Picea pungens glauca Kosteri*, *Abies Regina Amaliae*, and *Cedrus libani compacta*. In other parts of the garden are seen collections of Conifers exhibited by André Leroy, Angers; G. Duval, Lieusaint; and R. Goyer, Limoges. To the south of the pavilion is an artistically arranged water scene, designed and carried out under the direction of V. Tatoux, artificial rock builder, Lille. Large flat rocks shelve out from the side of the hill, and from amongst these bursts forth a stream of water, which flows into a small lake below. At the top of the incline are planted large specimens of *Buxus pyramidalis*, *B. microphylla*, *Carpinus Betulus* var. *pyramidalis*, &c., sent by Moser, Versailles.

MELIANTHUS MAJOR.

THIS Cape plant has long been an inhabitant of our greenhouses, where its peculiar but very handsome grey foliage always attracts attention; of late years it has been made use of for summer bedding, for which purpose it is very effective. Our illustration (fig. 57) was taken from a photograph kindly forwarded by Mrs. Dunbar Buller from Donaghadee, Ireland. The shrub grows there in the open-air, and has attained a height of 7 feet, and is about 24 feet in circumference. The plant has this year produced four spikes of its purplish-brown flowers, which are not only handsome, but structurally very interesting. The bees also find it worthy of notice from the quantities of honeyed nectar formed in the flowers, the conformation of which is so contrived to attract the insect and make it useful in conveying the pollen to other flowers.



FIG. 57.—FLOWERING SPECIMEN OF MELIANTHUS MAJOR IN A GARDEN AT DONAGHADEE.

Another very interesting feature of the garden is supplied by the Rose-beds, planted with material from various French firms. Almost all classes are represented, and nearly all are in good health and blooming well. Amongst the Hybrid Perpetuals, Captain Christy, Baroness Rothschild, and Ulrich Brunner are very noticeable. A bed of the Hybrid Tea Gruss an Teplitz is also very showy. G. Boucher, Paris, exhibits a collection of some 320 varieties on standards; these, however, appear to be suffering from the intense heat of the St. Louis summer. The hot weather, however, seems to agree well with the Cannas, of which there is a magnificent display. The principal exhibitors of these and Dahlias are Vilmorin, Andrieux et Cie., and Cayeux et Leclerc.

The garden was designed and the exhibits arranged by M. Vacherot, who was chief gardener at the Paris Exposition in 1900, and who now holds the position of landscape architect of the Bois de Boulogne. The work of construction was under the immediate supervision of M. Turc, another well-known horticulturist from Paris. M. Turc is now in charge of the garden in the absence of M. Vacherot. T. W. Brown, August 12.

THE COLLECTION OF KAURI GUM.

A REPORT reaches us of what is described as an important experiment which is being made in the collection of kauri gum in New Zealand. It is known to many that next to anime, or copal (which is the produce of *Trachylobium Hornemannianum*, of Zanzibar), kauri, or gum kauri as it is called in commerce, derived from *Agathis australis*, is the best material for varnish-making; but to be of good quality it must be, like other varnish-making gums or resins, dug from the ground, in which it has lain for such a lengthened period as to become semi-fossilised and consequently very hard. The harder the resin the better are its drying qualities and hardness when converted into varnish, consequently the more completely fossilised the resin is, so much greater is the value. Some very fine qualities of anime from Zanzibar have been known to realise as much as 40 per ton. This exceptionally fine quality is that which has lain in the ground for a very long period, and has mostly been dug from some depth beneath the surface, where no trees of the kind from which it originally exuded at present exist. The resin

which exudes from fractures in the trunks and hardens or concretes on the back, though quite brittle, is of comparatively small value for varnish-making. Thus it comes as a surprise when we are told in the report referred to that the new method with the Kauri Pine is to "cut through the bark and make a slight incision on the inner skin. It is then left, and in a few months the tree is ascended, and the

trunks with that dug from the ground, the question, which seems an important one, is whether, instead of increasing the supply or making it more permanent, it will not help to diminish it, notwithstanding that the report which has given rise to these remarks says—"Hitherto it has been generally dug from the ground, and the great drawback has been that the supply might become exhausted; but if the

large forests, growing up to a height of 150 feet to 200 feet. The wood is noted for its straight, even grain, of a light straw-yellow colour, and remarkably free from knots. When properly seasoned, it is not liable to warp or crack, and in consequence of these excellent qualities it is much in demand for engineers' pattern-making; another recommendation being the enormous size of the planks which can be obtained. On many of the trees, however, large wens or burrs are formed, producing one of the most beautiful cabinet woods imaginable, known as mottled kauri. Upon tapping a healthy tree the resin exudes in the form of turpentine, which hardens or concretes on the surface, so that in a forest of living trees kauri gum in almost every stage, from fluid, plastic to brittle, is to be found; but, as before said, that which has fallen from the trees and become buried in the ground, where it may have lain for ages, is by far the most valuable. This fossil resin varies not only in hardness according to the length of time it has been deposited, but also in colour and brilliancy, some qualities being perfectly transparent, and others nearly opaque and even black, due probably to the action of forest fires. It is also seen in commerce in pieces of all sizes, from dust up to blocks of 50 lb. weight. A single lump weighing 220 lb. was shown at one of the Colonial exhibitions. The resin is usually found a few feet below the surface, and it is located by the diggers by a system of probing the ground with a long iron spear, and afterwards digging at such parts where the spear has struck the gum. Gum-digging was originally carried on alone by the Maoris, the gum being exchanged by barter for other goods. At the present time thousands of people of all kinds, mostly those who cannot find any other occupation, are occupied in digging, the work being carried on till the locality is exhausted, the gum being taken to a central store and disposed of to an agent of some merchant. At the stores it is roughly sorted before being sent to Auckland, but on arrival there it is carefully sifted, cleaned and scraped, and packed for shipment in strong cases made of the wood of the Kauri Pine. The industry is said to give employment to about 7,000 persons; the value of the exports in 1899 amounted to £607,619, and in 1901 7,541 tons were exported, valued at £446,114. John R. Jackson, Claremont, Lympstone, Devonshire.



FIG. 58.—ROSE-COLOURED HYBRID ASTILBE.

Shown by Messrs. Van Waveren and Kruijff, of Haarlem, at the Holland House Show, where it received a special prize. (See *ante*, p. 46.)

gum which has flowed and hardened about the wound is chipped off, and is ready for the market." It is further said that the Government has marked off 400 trees for the experiment, and is carefully watching the results, the chief problem being whether the trees so treated will be found injured for the purposes of timber; for it must be borne in mind that the Kauri Pine is one of the most important and valuable of timbers. Besides the comparative small value of the recent resin found concreted on the

experiment now being made is successful the supply of gum may last for many years, and the value of growing kauri will be much increased." It is true that the quality of kauri varies considerably, and in consequence the market value also.

In the province of Auckland, whence the gum was at one time exclusively obtained, it is found only in open bush-land, where no vestiges of the trees are now existent. In other parts of the colony of New Zealand the tree flourishes in

REMARKS ON THE CONDITION OF THE FRUIT CROPS AT THE END OF JULY.

(See *Tables and General Summary, ante*, pp. 70-76.)

(Continued from p. 126.)

4, MIDLAND COUNTIES.

SHROPSHIRE (*continued*).—Apples are over the average in quantity and of good quality. The crop of Pears is rather under the average, also Plums, the trees of the latter being much infested with greenfly. Nuts in the hedge-rows are plentiful. Walnuts are rather scarce. Our soil is strong clay on the limestone formation, situated about 500 feet above the sea level. James Loudon, *The Quinta Gardens, Chirk, Ruabon*.

STAFFORDSHIRE.—Nearly all varieties of Apples set a heavy crop, but many are now dropping owing to the prolonged drought. The trees are clean and healthy, having been winter-dressed with caustic-alkali wash. Pears flowered less freely than Apples, and many of the young fruits having dropped, we have only a thin crop left. Our soil is a poor light loam, resting on a gravelly sub-soil, and is not at all suitable for producing first-class fruit. G. H. Green, *Enville Gardens, Stourbridge*.

— Apples set a heavy crop of fruit, which has necessitated much thinning. Pear-trees, with the exception of a few, are well furnished with fruit. Those trees whose blossom was cut off by

frost last season, and afterwards flowered a second time, have but a medium crop. Cherries, both dessert and "Morello," blossomed well and set freely, but later dropped quite half their fruit. Small fruits have been abundant, but the very scanty rainfall, only 2 inches since May 1, has made it necessary for much watering to bring the crops to perfection. The soil here consists of a stiff clayey loam, very wet in rainy seasons, but extremely dry and hard in such seasons as this. *G. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

— The fruit crops throughout are excellent, especially Apples and Pears. Strawberries and Gooseberries are abundant, but Currants are below the average. Our situation is high and exposed to easterly winds. The soil is fairly light, loamy, on a clay subsoil. *E. Gilman, Ingestre Gardens, Stafford.*

— I never saw Apple and Pear trees so full of bloom as they were this year. Apples have set well, and will be rather small in size. Pears did not set well from some unknown cause, although there were no late frosts to injure them. Plums and Damsons are a very thin crop. Gooseberries are very plentiful, Black Currant bushes looked very promising when in bloom, but they were badly infested with fly, and all the fruit on some trees dropped off. Strawberries promised well, but the dry weather we had caused them to be very small, in fact a lot of the late blooms shrivelled up from want of water. *John Wallace, Woore, Newcastle.*

— Strawberries, Raspberries, Black and Red Currants, and Gooseberries are good crops, but the plants are suffering much from want of rain. Apple trees are carrying good crops, but Pears not so good. Morello Cherries are very good, other varieties are not. Plums dropped badly at stoning time. Our soil is the stiffest clay varied with hard rock marl. *W. Bennett, Rangemore Gardens, Burton-on-Trent.*

WARWICKSHIRE.—Apple-trees are very heavily laden, but I fear the fruit will be small, in consequence of the long-continued drought. Pears look well, but are not so abundant as Apples. Of Plums, the varieties Victoria, Kirk's, Autumn Compôte, and Magnum Bonum are carrying heavy crops. The Damson crop is rather under the average. Apricots are clean, and promise well. The same remark applies to Peaches. Strawberries were excellent, but in consequence of the drought the later varieties were soon over. All small fruits are abundant. Filberts are not plentiful, but Walnuts are a heavy crop. *James Rodger, The Gardens, Charlecote Park, Warwick.*

— Most kinds of fruit-trees blossomed profusely, and hopes were entertained that the crops would be abundant; but a spell of north-easterly winds and continued drought have proved disastrous in many instances. *H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth.*

— All our fruit crops are good, but rain is needed to swell the fruit, the six weeks' hot, dry weather having thinned the Plum and Apple crops considerably. It looked at one time as if all the trees would be broken down by the weight of their crops, and consequently many of the trees were propped up. The soil here is a sandy clay resting on gravel. *A. D. Christie, Marriage Hill Farm, Bidford.*

— The flowering season of all out-door fruit promised well, but as setting time approached much of the blossom fell; especially was this the case with Pears and Plums on standard trees, but on walls I have seen some good crops of both Pears and Plums. Although much of the Apple blossom dropped, there will be an abundance of this fruit. As the weather kept continuously dry, we watered many of the best trees. Small fruits have been plentiful and good, but when not

watered and mulched have suffered from the severe drought. At Barston Hall, the seat of John Roderick, Esq., $2\frac{1}{2}$ miles from here, there are $4\frac{1}{2}$ acres of splendid Walnut trees planted about 100 years ago; they are heavily fruited with from two to nine nuts in a cluster. These trees are yearly top-dressed with lime, and this is followed soon after with another dressing of farm-yard manure. At the same place there is a modern orchard of 103 Apple trees of a good selection. They are on grass, but each tree has round it a 12-feet circle of clean earth, which every year receives dressing of well-rotted manure. The fruit on these trees is very promising. My soil is a strongish brown loam on a bed of marly clay, while below that is clean red sand containing water. The soil in the neighbourhood varies from the above to thin, black pebbly soil, on which fruit-trees do not thrive so well. *W. Miller, Berkswell, Coventry.*

5. SOUTHERN COUNTIES.

BERKSHIRE.—The fruit crops in this neighbourhood are in general above the average. Small fruits are a very heavy crop. Strawberries have been abundant, but were quickly over. Morello Cherry-trees have dropped their fruit largely and are generally a light crop. The soil here is of a light, sandy nature, resting on gravel, and crops soon suffer in time of drought. *J. Howard, Benham Park Gardens, Newbury.*

— The outdoor fruit crops this year are somewhat disappointing, considering the wealth of blossom all round, and the early promise of a grand crop in every department. Plums and Cherries dropped largely soon after setting, due probably to the somewhat immature state of the wood following the wet summer of last year. Strawberries have been exceedingly good, especially the varieties Waterloo and Royal Sovereign; Laxton's Latest is a grand addition. The soil here is a clayey loam, much given to cracking in dry weather. *Wm. Pope, Highclere Gardens, Newbury.*

DORSETSHIRE.—This is a grand season for all kinds of fruit, with the exception of Raspberries, which are suffering from the drought. All other fruits are looking well, the trees carrying heavy crops, and only require a good rain in order to swell up the fruit. The soil here is chalky, very shallow, and of a dry nature. *Thos. Denny, Down House Gardens, Blandford.*

— In this district the promise of heavy fruit crops early in the season has only been partially fulfilled. Apricots, Plums, and Pears are very disappointing, the trees bloomed profusely, and set over an average crop of fruit, but much of the latter dropped in the embryo stage. Peaches and Nectarines on the other hand are a good average crop, the trees being healthy and clean. Cherries are only fair, the trees being infested with black aphids. Apples are a heavy crop all round the district. Bush fruits are abundant and good, the same remark applies to Strawberries. There is an average crop of Figs, the varieties Brown Turkey and Brunswick being the best. The soil, a light to medium loam, on loose flinty gravel, requires heavy rain or copious waterings to obtain good results. *Ben. Campbell, The Gardens, Kingston House, Dorchester.*

— We are receiving encouragement this year for the labour and expense expended in our bardy fruit growing, by a generally good and satisfactory crop, Apricots being the only exception; but the bloom on these was so scanty and weak that a crop was not looked for. Apples are not only a heavy crop, but the fruit is cleaner than for many years past. Pears on walls are feeling the excessive heat and drought, and will be small where they cannot be artificially watered. Plums, with a few exceptions, as Coe's Golden Drop, &c., are a full crop,

and such free bearers as Early Prolific, Victoria, Czar, &c., have required heavy thinning. Sweet Cherries have been better than usual, but Morellos are only half a crop. Peach and Nectarine trees after two bad seasons are now making healthy wood again, and the light crop will no doubt finish well. Apricots are almost absent. Small fruits are splendid, Red Currants in particular. Strawberries may be said to have been the crop of the season. Of the newer kinds of the latter, Trafalgar has been excellent, and Climax is also a most valuable late variety. Of Nuts, Cobs give very poor promise, and Walnuts are only mediocre. *T. Turton, Castle Gardens, Sherborne.*

— What promised to be a very good year for the fruit crops in general was disappointing, owing to fogs and blight coming just as the trees were in full bloom. Some of the earlier Pears were saved, but the fruits have fallen twice. Still, what are left on the trees are very good indeed. The soil in general in this district is not conducive to good fruit culture. *H. Kempshall, Abbotsbury Gardens, Dorchester.*

HAMPSHIRE.—After such a promise in the the spring in the blossom on all fruit trees one cannot say now that bountiful crops abound. Apples, on some trees, are fairly good, while others are bare of fruit. Pears are a poor crop, excepting on trees on walls, which are carrying full crops. Peaches and Nectarine trees have a grand crop. The fly is troublesome, although there is not so much blister on the trees as is usual. Small fruits are good, but Gooseberry caterpillars are numerous. Our soil in the orchard is heavy on the clay. That in the kitchen-garden is better, having been under cultivation longer. *Arthur Lee, Palace House Gardens, Beaulieu, Brockenhurst.*

— Speaking broadly, the fruit crop here is a good one, although in some gardens in the neighbourhood the crop generally is thin, especially on light soils, where the bloom opened early. Where the soil is heavy, the crops, except Pears, are heavy. Apple crops have never been so heavy, the only exception being Warner's King, which even in that variety is variable. We have 200 trees of that variety; some have plenty of fruit, others none. The trees on the whole are free from insect-pests; the biting east wind experienced at the end of May crippled much of the foliage in exposed places. Worcester Pearmain, Lady Sudeley, King of Pippins, are most heavy croppers. *Edwin Molyneux, Swanmore Park, Bishop's Waltham.*

— Apples are a heavy crop, and the fruit and trees clean; they are already assuming colour. Pears do not, as a rule, do well on our cold clay soil, but they are so far promising in appearance, but always lack flavour. Plums, with one or two exceptions, are light crops. Cherries, both sweet and Morello, are bad in the extreme; after setting a heavy crop the fruit dropped wholesale. Small fruits, with the exception of Gooseberries, are good, especially Raspberry Superlative. Strawberries have been abundant and good, but the drought setting in the season has been of short duration. *A. G. Nichols, Strathfieldsaye Gardens, Mortimer, R.S.O.*

— Taken collectively the fruit crop here is very satisfactory, and the best known for some years. The trees flowered most profusely and were a grand sight. Raspberries and Strawberries are exceptionally good. Our soil is very light, resting on gravel. *James Wasley, Sherfield Manor Gardens, Basingstoke.*

— The fruit crops in this district are, on the whole, a fair average crop. Apples and Pears have dropped very much, but there still remains sufficient fruit for the trees to ripen. Peaches and Nectarines have been badly blistered. Plums are thin, the varieties River's Prolific, The Czar, Victoria, and Black Imperial are the best.

All bush fruits are good, and Strawberries carried the heaviest crops I have ever seen. Givon's Late Prolific, which I have grown this year for the first time, promises to be a splendid late variety. Our soil here is very stiff and cold, with a clay sub-soil resting on chalk. *J. Bowerman, Hackwood Park Gardens, Basingstoke.*

— We have above the average crop of Apples here this year, the fruit looking very clean and healthy. Pear crops are rather irregular in this district, although we have a good average crop, especially on trees on the walls.

spurs are dying. I cannot account for this. At one time I thought it was a serious attack of red-spider, but this I have proved is not the case; I wonder if any other of your correspondents have noticed the same thing. The one variety standing the heat best is Ecklinville Seedling. This variety is looking green and healthy and carrying really heavy crops on all the trees. I know it is objected to because it is rather soft and is easily bruised, still I consider it one of the best early cooking Apples. Other varieties that I have proved to be good are Newton Wonder,

a failure. I have for years picked the infested fruits off and burnt them, but this year I have the pest worse than ever. It seems to me we are suffering from a want of co-operation in combating noxious insects. *G. Woodward, Barham Court Gardens, Maidstone.*

— The marvellous wealth of blossom has not been followed by the expected heavy crops. I attribute this fact to unripened wood and want of vigour in the reproductive organs. The crop was still further reduced by a cold spell of easterly winds at a critical period. Aphis has



FIG. 59.—*CASTANOPSIS CHRYSOPHYLLA*: THE GOLDEN CHESTNUT.

Leaves golden-yellow on the under surface; bristly involucre, golden-brown. (See p. 152.)

The crop of Strawberries is exceptionally heavy, the fruit being of good size and flavour. Our soil is very heavy, with a clay subsoil. *Thomas Leith, Beaurepaire Park Gardens, Basingstoke.*

— All fruit crops here are bad, the fruit dropping wholesale after setting. Our soil is a strong stiff loam. *Noah Kneller, Malshanger Park, Basingstoke.*

KENT.—Apples at one time gave every promise of being an average crop, but from various causes have dropped badly. Even now, when the fruit is as large as hens' eggs, they continue to drop; consequently the prospects are not so promising as they were at one time. Some of our trees look as if the foliage has been scorched, the leaves being brown; and I notice some of the

Worcester Pearmain, Allington Pippin, Grenadier, Golden Spire, Stirling Castle, Lord Derby, Tower of Glamis, and Irish Peach. Councillor I would recommend to be planted more largely; it is a good grower and a continuous and heavy cropper, of the most beautiful straw colour, with a bright coppery blush on the side exposed to the sun. I am sorry to say that Bramley's Seedling is not a success here, as it drops its fruits even when they are quite large, and having a short stem it is easily blown down by the wind. In some districts I have seen this variety do grandly and have been envious of its success. Byford Wonder, and Chelmsford Wonder produce splendid fruits and are vigorous growers, and in my opinion equal to Newton Pippin. Pears set well, but owing to the midge the crop is nearly

been very abundant on the trees. *George Bunyard, Maidstone.*

— Apple-trees bloomed profusely, but the young fruit being infested with maggot, dropped considerably, and the remainder of the crop is generally small. Pears promising in many places. Plum-trees bloomed sparingly, and the crop is accordingly light. Cherries dropped heavily, owing possibly to the long-continued cold and partial exhaustion of the trees by the exceptional amount of bloom. Strawberries were a record crop and of good quality. Our soil is a mixture of loam and clay. *Geo. Fennell, Bowden, Tonbridge.*

— The most notable features in our gardens this year with regard to fruit are the great

Strawberry crop, and the presence of two pests on the Apple-trees—the Apple-sucker, and a peculiar black mould, noticed more particularly on the varieties Yellow Ingestre and Wellington. The latter pest is doing much harm to the fruit, and as far as I know is incurable. *Grower, Mereworth.*

— Up to the end of May all indications were favourable for a record fruit year. Insect-pests, in addition to cold north-easterly winds in early June, entirely altered the prospects of the Cherry, Plum, and Black Currant crops. Apples, Strawberries, and Gooseberries are most abundant. Raspberries are also a good crop, but suffering from drought. All fruit crops on walls, excepting Cherries, are over the average. Walnuts are a tremendous crop, and Cob-nuts a fair average. The soil here is a light, dry, warm loam of good depth. *Geo. Hutt, Lullingstone Castle, Eynsford.*

To be continued.)

THE RIVIERA IN SUMMER.

SIR THOMAS HANBURY writes:—"Although prolonged drought happens every summer on the Riviera, it is this year of such a determined and persistent character, and so combined with great heat as likely to prove disastrous to many gardens along the coast of the Mediterranean.

Many of those who love their gardens in England, and who flock to the Riviera in winter and spring, express surprise at the absence of plants that are commonly cultivated in England in summer in the open border. Could such persons see a garden on the Riviera before the autumn rains commence they would cease to wonder, and, on the contrary, express astonishment at so many things surviving so terrible a drought.

At La Mortola the last good rain that fell was on June 11, and it is not likely any more will fall before the second week in September, when there is a decided fall in the temperature.

Appended is a list showing what plants are in flower in summer, notwithstanding the heat and drought:—

Agave rigida, elongata.—Greenish.
Asclepias curassavica, L.—Antilles. Orange-red.
Banksia integrifolia, L.—Australia. Flowering since spring.
Bursaria spinosa, Cav.: Pittosporaceae.—Tree, with graceful branches covered with numerous pyramidal drooping panicles of small white flowers.
Burchellia capensis, R. Br.: Rubiaceae.—Cape. Flowers tubular, about 1 inch long; orange-red.
Calodendron capense, Thnb.: Rutaceae.—Cape. Tree. Flowers resembling somewhat the spikes of the Horse Chestnut.
Cereus candicans, Gill; *Spachianus*, Lem.: strigosus, Gill; *cœrulescens*, Salm., and several others—all night-flowering species, some very fine.
Clematis coccinea, Engelm.
Crotopia stapeliiformis, Haw.: Aselepiadaceae.—Cape. Curious succulents; stem thick at base, at the top twining. Flowers white spotted with brown.
Crinum Powellii, Hort.
Cyphomandra fragrans, Sendtn.: Solanaceae.—South Brazil. Evergreen shrub. Buds purplish-blue; flowers green, agreeably scented.
Ebenus cretica, L.; *Papilionaceae*.—Crete. Little shrub, with silvery-white leaves. Flowers resembling those of the common Sainfoin, but showier.
Erythrina caffra, Thnb., and *E. crista-galli*, L.: *Papilionaceae*.—The former with brilliant red flowers much finer than the latter.
Firmiana platanifolia, R. Br.—Large tree. Sterculiaceae.
Grevillea Banksii v. *Forsteri*.—With fine red flower-spikes.
G. juniperina, R. Br.—Yellow.
G. longifolia, R. Br.—Red.
Grewia occidentalis, L.; *Tiliaceae*.—A tall climbing shrub from the Cape, with elegant pink stellate flowers.
G. caffra, Meissn.
Huonia somalica, N.E. Br.—A pretty little *Stapelia* with brown-red flowers.
Hibiscus heterophyllus, Vent.—Queensland, New South Wales. Tall shrub; flowers large, single, 15 cm. across; petals white, rose on the base with dark purple centre and staminal column.
H. Rosa sinensis, L.—Flowering freely, large, deep red.

Jasminum odoratissimum, L.—Madeira. Yellow.
J. gracillimum, Hook. fil., *Botanical Magazine*, t. 6559.—Borneo. White.

Ipomœa bona, Nox. L.—South America. White.
I. Learii, Paxt.—Tropical America. Commonly cultivated on the Riviera. Perhaps the most floriferous of all. Violet-blue.

Jacaranda ovalifolia, R. Br.; *Bignoniaceae*.—Brazil. Tree. Always most beautiful at this time with numerous panicles of violet-blue flowers.

Lagunaria Patersoni, Don: *Malvaceae*.—Tree, with numerous showy pink flowers. Norfolk Island, Queensland.

Leonotis Leonurus, R. Br.—Cape. Shrubby, with numerous whorls of large bright-red flowers. Very showy.

Melaleuca armillaris, stypheloides, &c.

Musa Basjoo.

Nerium Oleander, L.—A great show everywhere, in the garden, and in the valley, along the road, &c. Indigenous.

Oncidium bifolium, Sims.—South America. A little Orchid growing epiphytically on a Fig tree and a Lemon tree. Flowers yellow.

Opuntias, a great number of species, several for the first time, of which the flowers were yet unknown.

Paschanthus Taggii, Schinz.—A curious *Passifloraceae* from German South-west Africa (Dinter.), with a large tuberous rhizome. Male plant only.

Parkinsonia aculeata, L.; *Cæsalpin*.—South America. A graceful tree, with fine foliage and large, pretty yellow flowers.

Pithecoctenium muricatum, Moc.; *Bignoniaceae*.—Guatemala. Tall climber. Flowers white with yellow throat, in large panicles. Fruit known as "Moukey-brush."

Plumbago capensis, Thnb.—Cape. Pale blue or white; very graceful plant, much grown on the Riviera.

Plumiera rubra, L.—Tropical America. Flowers similar to those of *Nerium Oleander*.

Proustia pyrifolia, Lag.; *Compositæ*.—Chili. Climbing shrub; flowers pink.

Pittosporum rhombifolium, A. Cunn.—Queensland; N.S. Wales. A small tree with large umbellate corymbs of small white flowers.

Psidium Cattleianum, Sabine, and *P. Guajava*, L.—Tropical America. With Myrtle-like flowers.

Rosa bracteata, Wendl.—China.

Solanum.—Many species, as *Wendlandi*, *jasminoides*, *bonaviensis*, &c.

Stigmaphyllon ciliatum; *Malpighiaceae*.—Brazil. Climbing shrub. Flowers yellow, resembling an *Oncidium*.

Stereulia diversifolia, G. Don.—A tall tree from Australia. Flowers numerous, campanulate, white.

S. lurida, F. M.—Flowers red.

Streptosolen Jamesoni, D. C.; *Solanaceae*.—Colombia. Little shrub, very free flowering. Flowers changing from yellow to deep orange-red.

Tecoma Ricasoliana, Hort. Ital.—Large climber; rose.

Trachelium cœruleum, L.; *Campanulaceae*.—A very pretty herbaceous, half-wild, with large umbellate corymbs of pale blue flowers. *Thomas Hanbury, La Mortola.*

SOILS AND MANURES FOR SPECIAL CROPS.

(Continued from p. 88.)

THE CHRYSANTHEMUM.—The next plant to which attention will be directed is the Chrysanthemum, which is as great a favourite in the floral world as is the Carnation or the Rose.

Dr. A. B. Griffiths has kindly provided the writer with an analysis of the Chrysanthemum plant which shows the following chemical composition in parts per hundred:—

Potash	16.2
Lime	26.3
Soda	10.4
Magnesia	10.2
Iron oxide	3.7
Phosphoric acid	19.5
Sulphuric acid	4.7
Silica	6.0
Chlorine	3.1

These figures show that lime forms an important constituent in the main structure of the Chrysanthemum plant, comprising as it does more than one-quarter of its total mineral substance. Phosphoric acid is also a conspicuous element, while potash ranges third. Soda and magnesia come fourth on the list, and are nearly equal in their proportions. The element nitrogen forms 2.92 per cent. of the organic substance of the plant.

The chemical composition of the Chrysanthemum seems to point, therefore, to the requirement of a fairly complete manure, of which superphosphate or bone-meal should form a prominent part. The excellence of any crop does not resolve itself entirely into questions of the kind and amount of manure used. This is particularly true of the Chrysanthemum. Consideration must be given to the variety of the plant and the character of the cutting. That a weak cutting or variety must receive different treatment from a hardy one is self-evident.

The physical condition of the soil is of almost as much moment as its chemical constitution. It is of prime importance that the soil should be porous, in order that thorough drainage and aëration be obtained. For this purpose it is well to mix with the soil a certain amount of sharp sand and charcoal, the presence of the latter being particularly desirable. The nature of the soil, too, governs the manner of potting. For a sturdy growth, light soil should be very firmly packed, while heavy soils require only loose packing.

COMPOSTS.

The question of the feeding of the Chrysanthemum resolves itself into two parts, namely, the nature of the compost and of the subsequent feeding which takes place when the flowering-buds appear. It is commonly held that the basis of the compost should consist of a good fibrous loam. The use of a very heavy clay loam brings with it the danger of water-logged roots, while a very light sandy soil permits excessive drainage and consequent root starvation. It is preferable to err on the side of lightness rather than of heaviness.

With the loam, well-rotted stable-manure may be mixed in various proportions, although the ratio of 1 part manure to 3 parts loam will probably give the best results. Horse, cow, and sheep manure can all be used with good results; but cow-manure is usually preferred, as it gives up its fertilising properties gradually.

It is often advantageous to add to the compost 1 part in 4 of good leaf-mould; with the lighter soils this is particularly desirable, not so much because of any addition of nutrient material, but because of its power of retaining water and plant-food.

Various animal as well as mineral fertilisers have frequently been added to the compost, and sometimes even used as substitutes for the stable-manure. Guano has thus been used with good results; so has fish-manure and dried blood. A very good practice is to add to every cubic yard (20 bushels) of compost 40 lb. of finely-ground bone-manure, which not only serves as a source of phosphoric acid and lime, but also furnishes some nitrogen. Soot also has with advantage been made a part of the compost. This furnishes as much as 3 per cent. nitrogen, chiefly as sulphate of ammonia, as well as small quantities of phosphoric acid and potash. It may be used at the rate of 1 to 5 lb. of soot to 100 lb. of the compost. Should the loam be at all deficient in lime, the deficiency should be corrected by the addition of a few handfuls of slaked lime (2 or 3 lb.) per cubic yard of soil. A lack of lime will cause soft stems and flabby leaves. Its importance is shown by the foregoing chemical analysis.

Nitrate of soda and sulphate of ammonia have been recommended by some growers as a part of the compost. The evidence in favour of this practice is at present insufficient to commend it. It seems an unnecessary addition, with danger of a too concentrated soil solution, and waste of nitrogen through rapid drainage. Excessive concentration of nutrients in the soil solution is more injurious than a deficiency, because of the inability of the roots to absorb solutions above a certain degree of concentration. The result is that the plant starves. This fact has been very

strikingly shown by some *Chrysanthemum* cultures seen by the writer within the past few weeks. Again, in the presence of an excess of nutrients a good ball of roots is not produced, even though the concentration of the soil solution is not too great for absorption by the roots; and, further, the roots are not in a condition to take up the subsequent liquid-manure. The best plan is to have a moderately rich compost, thereby obtaining healthy roots, stems, and leaves, and then, when flowering buds appear, to apply the rich liquid-manures. Experiments have shown that nitrate of soda and sulphate of ammonia may be used as a substitute for stable-manure, although not as an addition to it. Still, this

the typical *Iris Saari*. I travelled twice in Eastern Cilicia, into the Rassan Oghlon district, the eastern boundary of the plains, and there found, on the classic ground mentioned by Kotschy, an *Iris* of the *Oncocyclus* group, which has absolutely nothing to do with that incorrectly named *Iris Saari Nazarena*. Herr van Tubergen, of Haarlem, takes it for *Iris Kaniss adjani*, Freyn; but Herr Sprenger has now decided that the plant is different from that species. The original plants of Herr Theodor Kotschy are in the Hof-museum at Vienna. From there I received in a most courteous manner the information that there is no material of this species existing in the herbarium. In Boissier's *Flora Orientalis*

Further, according to the distinguishing characteristics mentioned by Herr Leichtlin (especially that the flower is not considerably larger than *Iris Bismarkiana*), the plant here figured is to be accepted as the true *Iris Saari*, Schott.

Iris Bismarkiana, Regel, has nothing at all to do with *Iris Saari*, Schott. The plant figured in the *Botanical Magazine* as *Iris Saari* is *Iris Bismarkiana*. *Iris Kaniss adjani*, Freyn, is to be considered only as an inferior horticultural variety of *Iris Saari*.

Iris Saari, Schott, is a strong-growing plant, which I found up to an altitude of 6,175 feet. It is the hardiest and the most easily cultivated of all the species of *Oncocyclus*. It flourishes on a



FIG. 60.—IRIS SAARI.

does not at present seem practicable, the better plan being to reserve these for the subsequent feeding as liquid fertilisers. J. J. Willis, Harpenden.

(To be continued.)

IRIS SAARI, SCHOTT.

IRIS SAARI was described in the *Gardeners' Chronicle*, June 17, 1876, p. 788. It was discovered by Theodor Kotschy in Eastern Cilicia in 1854. According to Boissier it has lilac-blue flowers. In the *Botanical Magazine* *Iris Saari lurida* is figured; this is nothing more than *Iris Bismarkiana* of Regel, which in due time was placed on the market by Carl Sprenger. It was natural that I, who have for the past ten years been accustomed to travel in Asia Minor for botanical purposes, should have discovered what constitutes

Iris Saari lurida is mentioned as having been obtained from Herr Leichtlin. He wrote to me as follows:—

"April 28, 1904.

"I received *Iris Saari* from the Hotsch collection. Baker has, I know not why, attached the name *lurida* to it, but, to be sure, my *Saari* is somewhat differently coloured. It was not Regel, but Sprenger, who first named it. *Saari* was discovered by Kotschy but it is [different] from *Bismarkiana*, which is much larger and of a totally different habit. The flowers of *Saari* are considerably larger, while its habit is more dwarfed, something like that of *Iberica*.

MAX LEICHTLIN."

Consequently, *Iris Saari Nazarena* has been happily omitted in all garden catalogues. But as in this district no other *Oncocyclus* *Iris* grows, Theodor Kotschy could only have collected the plant that I myself re-discovered.

limestone soil, with great dryness in summer. In habit the plant recalls *Iris iberica*, and grows about 1 foot in height. The leaves are greyish-green, $\frac{1}{2}$ -inch wide, and from 6 to 8 inches long. The tips are rounded, folded together, and curved backwards in sickle fashion.

The flower-spike grows up to 1 foot in height (above the leaves). It bears the flowers singly, provided with a bi-partite spathe which is of a yellowish-green colour and encloses the pistil. The flowers are sweetly perfumed with honey and are very variously coloured. They only occasionally show the lilac-blue colour mentioned by Boissier; besides, there exists such an abundance of shades in blue, brown yellow, that it is surprising that it should be a wild plant. Most of them are very beautiful and peculiar. The colouring most frequently met with is as follows:

the lower petals pale to citron-yellow, with purple or purplish-brown veining, great purplish-brown spots, in the middle fully bearded with bright yellow, the inner petals are white with lilac-violet, or slaty-blue, or purplish-brown, and more often still chestnut-brown shadings and markings. Very likely it may also have lilac-coloured flowers. *W. Sicke, Mersina, Turkey in Asia.* [We publish this communication with some hesitation, as we are not sure of the author's meaning in all cases. The manuscript is not only written in German, but in German script, which we are not sure that we have correctly deciphered. The photograph (fig. 60) tells its own tale. Ed.]

CULTIVATION OF MELONS.

A LOW-BUILT house, 10 or 12 feet in width, with a south aspect, is the most suitable structure for Melon cultivation, and will allow a border 4 feet 6 inches wide, facing south, for the Melon quarter, with a border 3 feet wide at the back, which can be utilised for growing Cucumbers, which do not require such an amount of sunshine as Melons. This allows 2 feet 6 inches for the pathway. A single brick wall should be built by the side of the pathway, on which to carry iron stays to the outer wall, upon which planks or corrugated iron is laid, on which to grow the Melons. A flow and return pipe should be laid beneath this staging to allow a suitable bottom-heat to be maintained. The plants can be trained either upon removable wire trellises or on permanently fixed wires, the former being more convenient when washing and cleansing the house. The first batch of seed may be sown early in January, placing one good seed in a well-drained thumb-pot, in a mixture of three parts loam and one part leaf-mould. Plunge the pots in cocoanut fibre in a propagating frame with a bottom heat of 75°. Air should at first be given cautiously, and when they are sufficiently hardened off they should be taken out of the frame and placed well up to the light in a house having a temperature of about 70°. As the first rough leaf appears, pot them into 4½-inch pots, using less leaf-mould than before; no consolidation of the soil is needed beyond a gentle pressure with the fingers. When the third or fourth rough leaf makes its appearance they are ready to plant in their fruiting quarters, which should have been prepared two or three days in advance of planting. A layer of stable-litter and leaves should be spread evenly on the planks or corrugated iron to form a suitable drainage. The soil should consist of good old loam of a rather heavy nature; the use of leaf-soil is not advisable, as it induces too much growth. The more lumpy the soil is and the firmer it is made, the stronger will be the growths obtained. The soil can be placed either in the form of a ridge, or in mounds about a foot in height, allowing one plant for each mound; the last mentioned is preferable. Too much soil should not be allowed, as it will get sour before the roots penetrate it, and more can always be added. When the soil is at the temperature of the house, it is ready for use. A neat stake should be placed to each plant to support it until it reaches the first wire. The presence of slugs must be carefully guarded against. Air should be given freely on mild sunny days, always avoiding cold draughts. Syringe the plants and damp the walls and floor twice a day; this will check red-spider. The plants will require stopping when they have grown three-fourths of their allotted distance, pinching the lower laterals at the same time. The growths that are showing fruit should be stopped to one joint above the fruit, so as to keep the sap moving onwards. The laterals that are not showing female flowers may be stopped at two joints, and the sub-laterals at one. Artificial pollination is necessary, and should be performed on a sunny

day, when the petals are well expanded, stripping the male flower of its petals and applying the pollen to the stigma of the female flower. Meanwhile it is best to keep the house in a drier condition. Fire-heat should always be kept back whenever possible, as natural heat is much preferable. The soil must be kept in a moist condition until the fruits are ripening, when the plants need little water. Never allow the water to be poured on the stems of the plants, as this is one of the chief causes of canker. Should canker appear, dust the affected parts with powdered lime or charcoal directly the disease is noticed; this will probably check it. As soon as the roots appear through the surface, a top-dressing of lumpy loam is needful. If medium-sized fruits are required, three or four are quite sufficient for one plant to support. When they are swelling nicely they will be greatly benefited by a watering of weak liquid-manure or some artificial manure, washed into the soil. When the fruits are about three-parts grown they will require supporting, which can be done either with soft string or pieces of board 4 or 5 inches square, suspended from the wires, or with net bags which are made especially for the purpose. *W. B., Risholme Hall.*

PLANT NOTES.

TWO NEW HARDY NYMPHÆAS.

NYMPHÆA TETRAGONA VAR. *HIMALAYENSIS*.—This is the smallest *Nymphæa* yet seen, smaller than the well-known tetragona or pygmæa of the gardens. In the garden of Mr. Sprenger it is grown in small pots, and flowers very well, two-year-old plants producing bloom from May till November uninterruptedly. The flowers float, are only 3–4 cm. in diameter (1½ inch), snow-white with yellow anthers. The leaves are small, dark-green, sometimes marbled with brown. Seed is produced abundantly, the seedlings flowering in the second year. This is a welcome addition to the collection of aquatic plants for pot or tub culture.

N. vomerensis × (new hybrid).—A new hybrid raised here between the Italian *N. alba* and *N. tetragona himalayensis*. It is suitable for pot-culture, and also for culture in the open in basins. It grows luxuriantly; the leaves are intermediate between those of the parents. The flowers float on the surface of the water, and are produced abundantly. They are snow-white, fragrant, and in general character intermediate between those of the parents. Fertile seed is only sparingly produced. *William Müller, Naples.*

The Week's Work.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Parsley-beds that are coming on in successive stages of growth for the winter and spring supply should have the older beds or any that are growing too rank cut level with the ground, afterwards giving them a good top-dressing of soot and wood ashes. Beds thus treated will make fresh growth and keep up a supply longer than if left as they are.

Potatoes should be harvested as they ripen, and stored as advised in a previous Calendar. Northern Star, Evergood, and Up-to-Date are with us in full growth, but some of the haulms are slightly spotted with disease.

Lettuce.—A sharp look-out must be kept on plants coming through the ground, or the slugs, which are now favoured in their travels with heavy night dews, will eat the young plants off as they come through the soil. Dust the rows early in the morning with air-slaked lime or soot, and run the hoe through the ground occasionally

to keep down weeds, and work up a fine tilth to prevent the slugs from finding a hiding-place.

Peas.—In this neighbourhood haw-finches, blue-caps, and sparrows are so plentiful that we have had the greatest difficulty in keeping up the required supply, owing to their predatory habits, and as a last resort to check their depredations we have had to cover the rows with nets. Mildew has also made its appearance, and so far as our experience goes, chemicals as a preventative and cure are of but little use in saving the crop. A copious supply of water at the roots to encourage growth and help the plants to resist the attack, which we believe is favoured to a certain extent by insufficient moisture at the roots, would be beneficial. The disease always commences here about the middle of August after showery weather and during heavy night dews, before the soil is sufficiently saturated to encourage growth. The varieties Duchess and Sutton's Peerless Marrowfat are much infested with the fungus, while Ne Plus Ultra and Sutton's Imperial Marrowfat are almost free from the disease. The latter variety, on account of its dwarf nature, requires careful protection from the attacks of slugs, which destroy not only the lower leaves, but also the flowers as they open.

Turnips.—Late sowings are now making good progress, and early thinning must not be neglected.

Endive.—The most forward plants require tying up and blanching, and the hoe must be kept at work if weeds appear.

Tomatos.—Take cuttings of the best varieties, which will soon strike if placed in a sandy compost and put in a cold frame or on a shelf indoors. Tomatos do not always come true to seed, and any of special merit should be propagated by cuttings.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Dendrobiums.—Most of these are now completing their season's growth, and the plants should be frequently looked over. Those that have finished making their growth, and have the terminal leaf at the apex of the bulb expanded, should be placed on one side or at one end of the house, where more light and air can be admitted, but less atmospheric moisture. Where a house with a southerly aspect can be conveniently set apart for them, the ordinary shadings may be dispensed with altogether, and the roof-glass thinly whitened over, using a mixture of ordinary flour and water, which as the season advances will gradually wear away, and allow of the passage of the proper amount of sunshine that is necessary thoroughly to ripen the newly-made growths. Ainery from which the Grapes have been gathered is also an excellent place for these plants while at rest. A position can be selected where the plants can be gradually removed from moderate shade to clear sunshine, carefully avoiding cold draughts. To expose these plants suddenly to full sunshine is a mistake, as is also the practice of entirely withholding water at the roots immediately the growths are made up. Examine the plants from day to day, and water in moderate quantities those that are dry or that show signs of shrivelling. Plants growing in small pots or shallow pans should be taken down and thoroughly watered, but they must not be watered again until the whole compost has become dry. Careful judgment is necessary in watering the plants when exposing them to the full glare of the sun, as frequently the moss on the surface appears to be quite crisp and dry, while underneath the soil is very wet, and if kept in a constantly saturated condition will cause the roots to decay. Ventilate freely on all favourable occasions, plenty of fresh air being very essential for the proper maturation of growth.

Plants of Miltonia vexillaria that have commenced to grow may now be repotted should they require it. Instead of placing them in large pots at this season, I find it is better to repot them into small pots and to repot them again into large ones about January or February, at which time the roots from the new growths become active in not only lengthening themselves, but also

in sending out many lateral rootlets. When repotting a plant, turn it carefully out of the pot, pick out all the decayed compost, and cut off all dead roots. A moderate quantity of well-dried Fern rhizome may be used for drainage, working among the roots the following compost well mixed together—one-fourth fibrous peat, one-fourth leaf-soil, and one-half sphagnum moss, also a small quantity of coarse silver sand. Surface the compost with about half an inch of living sphagnum moss. The rare *M. Bleuana* and its variety *nobilior*, which are now in full growth, may also be repotted, *M. v. rubella*, *M. v. r. superba*, and *M. v. Leopoldii* will not require repotting until the new growths have well started. The cool house will suit these *Miltonias* for the present, but about the end of September they should be removed to the intermediate house. Afford them plenty of fresh air at all times. Some of the Brazilian *Miltonias* are fast sending up their flower-spikes, and will require plenty of water at the roots. A slight spraying overhead occasionally until the flowers open is beneficial, it also prevents red spider, to which these plants are liable to be infested.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Preparation for Planting.—Although it is too early at present to plant fruit trees it is not too soon to arrange to what extent planting is to be carried out, and to prepare the land for the reception of the trees and bushes by trenching, draining, and getting together suitable material, such as old dried mortar-plaster, wood ashes, road scrapings, &c., for mixing with the soil, so that there shall be no delay when the season arrives in getting the planting done.

Gooseberries sometimes occupy the same plot of land for many years and fruit well, provided proper attention is given to pruning, feeding, and top dressing. Still they may be left too long in one position, and a change becomes necessary for the production of heavy crops of large berries. The land intended for planting should be well worked and enriched to a good depth. It is not necessary when trenching the plot to bring up the inferior sub-soil, but this should thoroughly be broken up to allow the water to pass through freely in very wet weather. *Gooseberries* delight in a deep loam, and although they will sometimes succeed with rough treatment it is better, when making new permanent plantations, to bestow extra care and attention when preparing the land for the reception of young bushes. In open fields where trenching is not practicable, the plough should be used for stirring the land as deeply as possible, afterwards working it well with the harrow, &c., until it is thoroughly clean, friable, and fit for planting when the proper time arrives.

Black Currants.—Where these are very thick, some of the branches may be cut out to admit light and air into the interior of the bushes to encourage the growth of young, strong, fruiting wood, as it is from these that the finest fruits are produced. In the case of large bushes I frequently cut them down to within a few inches of the ground early in the spring, and the new growths the following season have produced excellent crops of large berries. *Black Currants* delight in a rich, moist soil, and will grow and fruit well where other kinds of fruit will not succeed. The gall-mite (*Phytoptus ribis*) gave us a lot of trouble last spring, especially in one part of the garden, where the bushes were terribly infested. Picking off the large buds was more or less practised. I know of no remedy for the pest except hand-picking and liberal feeding, to encourage plenty of young, healthy growths.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Early Forced Vines planted out in the borders, that were started during the month of November, will by now have the wood brown and hard, and the leaves turning yellow. These Vines should now be pruned without waiting for all their leaves to fall; this treatment will cause the Vines to enter their resting period sooner—a condition

from which they derive considerable benefit. When pruning permanent Vines upon the spur system for early forcing, it is well not to practise a too restricted system, and if space is available, instead of allowing one shoot to the spur, encourage two or even three, which tends to invigorate the Vines by the extra foliage and the corresponding development of roots.

Pruning Early Vines.—*Black Hamburgh* is the recognised favourite for early work, and in this variety the laterals should be pruned to within a couple of buds from the base, when bunches of sufficient size and quality will be produced. The same treatment applies to *Foster's Seedling* and *Madresfield Court*; but in the case of *Buckland Sweetwater*, the third bud should be chosen. Where the practice of leaving two or three shoots is followed, prune each shoot to a different bud, one, two, or three respectively from the base. Vines in an unsatisfactory condition at the roots should have the soil removed down to the roots, and fresh loam, &c., substituted, as advised in the Calendar of January 23.

Black Hamburgh Vines appear to have revelled in the intense heat recently experienced, judging from the superb colour and finish of the fruit and the present condition of the foliage. This has been assisted in a measure, no doubt, by the abundant ventilation and fairly cool nights experienced, giving rest to the Vines. To induce these Vines to fruit much earlier next year, we have been removing all laterals, and gradually shortening the principal shoots. The final pruning will be deferred until the end of September.

Vines with fruits colouring should be assisted with fire heat, accompanied by a free circulation of air. Late Grapes require time and liberal supplies of stimulants to attain that fullness of berry and finish so necessary to secure good keeping qualities. Provide a temperature from artificial heat of 70°, rising 10° or 15° with sun heat; the night temperature should not be allowed to fall below 65°.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

The Wild Garden.—*Liliums* and other flowering bulbs that have been in the houses, and are not required for that purpose another season, may be at once planted-out in the wild garden. *Hydrangeas* may also be planted-out. These plants have done exceedingly well outside this season. *Camellias* that are planted-out should have plenty of water to swell their buds, and some fresh mulching should be applied. *China Roses* should be kept clear of weeds and rubbish, and the ground around them forked occasionally. Ground that is intended for the reception of bulbs in a few weeks' time should be prepared by trenching or deeply digging. A good mulching of rotten dung should be given to *Rhododendrons* and *Azaleas*; this will keep down the weeds and greatly benefit the plants. Keep all creepers tied up. Some of these may be thinned now if the growth is too thick. These plants should be given plenty of water; the same applies to shrubs that are suffering from the prolonged drought. The seed-vessels of *Foxgloves* should be cut off, and laid on any bare bank or place that requires furnishing; the same remark applies to *Sweet Rocket*, *Honesty*, and seed-vessels of any other wild flowers. *Snowdrops*, *Aconites*, and *Scillas* may now be planted in good large masses or clumps in some clean ground, adding fresh soil if necessary. *Water-rats* are very troublesome where there are *Tulip*-bulbs. Snaring them with a wire noose or shooting them are the most successful ways of destroying them.

Propagating.—Cuttings of *Pelargoniums*, *Heliotropes*, and other plants used for summer bedding should now be taken. Boxes may be used for the purpose of rooting them in. See that the soil is free from grubs and wireworms. Place the boxes containing the cuttings in the sun, give one good watering to settle the soil, after which they will not require watering for some days. The cuttings, if care be taken, may be taken off without disfiguring the beds. Plants of *Lobelia* to be

kept through the winter should be taken up and potted; if cut back and allowed to break they will furnish good cuttings in the spring. Cuttings of sweet-scented *Verbena* should be inserted round the sides of pots.

Pentstemons and *Antirrhinums*.—Cuttings of these should now be taken and inserted round the sides of pots, or placed in a frame where there is a little artificial heat. The weather having been very dry, these plants have made but little growth; if the old flower-stems be now cut off, they will send up some good cuttings for a later batch, and can be lifted for storing during the winter.

Pansies and *Violas*.—Cuttings of these plants will require attention with regard to damping and shading; pull the weeds out before they become too large. Slugs must be kept in check. Old plants can be lifted as soon as they break into growth, divided up, and planted for stock next spring in a shady border. If the weather is bright they should be shaded with a few boughs.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Hippeastrum (Amaryllis). Plants which flowered early will now have completed their growth, and all shading should be discontinued, and the plants exposed to the full sunshine in order to thoroughly mature the bulbs. Although the plants should not be dried off prematurely, it is necessary to note at once when a plant has quite completed its growth, and is preparing to rest. This is indicated by the oldest leaves beginning to turn yellow, and also by the absence of young leaves in the centre of the plant. When these signs are observed, the amount of water afforded to the roots should be gradually reduced, withholding it altogether when the foliage dies down. Later plants and seedlings which are still in full growth should be afforded plentiful supplies of water and an occasional application of liquid manure. Seedlings should be kept growing on without any rest until they flower, the after treatment being the same as that recommended for the older bulbs. *Thrips* are very partial to *Amaryllis*, and cause much injury to these plants unless they are kept well in check by sponging and fumigating. Now that the old plants have completed their growth, they may be placed in a cool frame or pit until the end of the autumn. When the bulbs are dried off and quite at rest, they may be wintered in any structure where the temperature does not fall below 38°. This may be considered a safe limit, although once in my experience a batch of bulbs which had commenced to throw up their young leaves were accidentally subjected to a temperature which was one or two degrees below freezing point, without apparent injury to either leaves or bulbs.

Richardia africana. Plants in pots, which have been dried off and rested during the summer, may now be repotted. Turn the plants out of their pots, and shake the whole of the soil from the roots. It is a good practice to sort the rhizomes into three sizes and pot the largest into 7-inch pots, the second size into pots 5 or 6 inches in diameter; if required the smallest rhizomes may be placed to the number of three or four in 6-inch pots, and grown on to increase the stock. If large specimens are required, three or more of the best rhizomes may be placed in pots of a correspondingly larger size. A suitable compost consists of three parts loam, and one part well-rotted manure. After being potted, the plants should be placed in a cool house or pit. At first, only sufficient water should be given to keep the soil slightly moist, but when the plants are rooting freely liberal supplies may be afforded. If a long succession of flowers is required, some of the best rooted plants, after they have been potted two or three weeks, may be placed in a temperature of 55° to 60°, where they will make rapid progress. Batches of plants for succession should be placed in heat as required. If plants are required to be in flower at Easter the necessary number should be wintered in the coolest house available, provided the temperature be not allowed to fall to freezing point.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, AUG. 31—Bath Floral Fête (2 days).

THURSDAY, SEPT. 1 { Paisley Horticultural Society's Show (2 days).
Arundel Agricultural and Horticultural Show.

FRIDAY, SEPT. 2 { National Dahlia Society's Show, at Crystal Palace.

SATURDAY, SEPT. 3 { German Gardeners' Club Meet.
Soc. Franç. d'Hort. de Lourdes Meet.

SALES FOR THE WEEK.

MONDAY NEXT—

3,000 lots of Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.

WEDNESDAY NEXT—

2,500 lots of Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.

THURSDAY and FRIDAY NEXT—

Large consignments of Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—60.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 24 (6 P.M.): Max. 64°; Min. 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 25 (10 A.M.): Bar., 30.2; Temp., 61°. Fine.

PROVINCES.—Wednesday, August 24 (6 P.M.): Max. 60°, S.E. Coast of England; Min. 53°, East Coast of Scotland.

Vallota purpurea alba. THAT a white variety of *Vallota purpurea* has existed is well known, and it is interesting to record its re-appearance as evidenced by living flowers, and a photograph (fig. 61) kindly sent by Mr. JAS. WHITTON, Superintendent of Parks, and Curator of the Botanic Gardens, Glasgow, who, in reply to our enquiries as to its origin, states:—"The bulbs were purchased by a local seedsman from a wholesale firm in London, who say that the bulbs came from Cape Colony (the Knysna Forest district). We purchased two hundred bulbs, and sent fifty to each of the following places—viz., Botanic Gardens, Queen's Park (Camphill), Springburn Park, and Toller-cross Park. It was in the last-named park that the white one appeared. The bulbs have generally bloomed, but this is the only white one in the lot. There was not the slightest apparent difference in the bulb, foliage, or flower-stems. In fact, the buds were well developed when our foreman noticed the paleness, and this abnormality made him observe the plant more carefully, and call my attention to it when I visited the park." Reference has been made to a white variety of *Vallota purpurea* on several

occasions in the *Gardeners' Chronicle*. In the issue of August 5, 1893, p. 160, is a note: "*Vallota purpurea*.—Messrs. VERTEGANS send us flowers from a bulb received from the Cape as a white variety. The colour, however, is a delicate warm pink, and very beautiful."

In the *Gardeners' Chronicle* (report of the Scientific Committee of the Royal Horticultural Society), August 14, 1897, p. 112:—"Cream-coloured *Vallota*.—Dr. MASTERS exhibited blossoms of this variety (received from a correspondent). A white one is known to have existed, but is apparently lost to cultivation. It was suggested that crossings should be made with the present one, so that possibly the white may re-appear." Without differing specifically from the coloured type except in the matter of colour, there is still in all these light forms

which has fortunately become the property of the Corporation of the city of Glasgow.

It is probable that Mr. WHITTON's skill may increase the plant and secure its establishment in gardens.

A World-wide Gardeners' Association.

THE formation of a gardeners' association in this country may now be looked on as an established fact.

We earnestly hope it may be conducted on right lines, and go on and prosper. Experience will show what amendments, if any, may be necessary in the programme, and the Executive Committee may be trusted to consider and act on any practicable suggestion. In the meantime the same idea has "caught on" in the United States, and we are glad to find our American contem-



FIG. 61.—VALLOTA PURPUREA ALBA: REAL SIZE.

a something which suggests the notion that hybridity not sufficiently potent to affect the shape of the flower or general habit of the plant might have originated the white, as it has been known to produce the light forms.

In the *Gardeners' Chronicle*, November 10, 1900, interesting particulars are given of the origin of a remarkable batch of seedlings, on which we had previously remarked, "with flowers of a distinct pleasing shade of cerise," and which were raised by Mr. ARTHUR RIX, of the Miner's Bank, Truro. These had been obtained by crossing *Vallota purpurea* with *Amaryllis Belladonna*. Of the batch raised, ninety per cent. were identical with the ordinary *Vallota purpurea*, but many of the others showed variation towards the white form by colour suppression.

Both *Vallota purpurea* and *Amaryllis Belladonna* grow in close proximity in some parts of the southern provinces of Cape Colony, and it is possible that in a state of nature intercrossing may have resulted in an occasional but very rare albino, one of

porary, *American Gardening*, edited by Mr. LEONARD BARRON, the son of "BARRON, of Chiswick," pushing the matter vigorously. From the same country we have received a further suggestion, good in itself, but of doubtful practicality. We prefer, however, to defer comment on the proposal, and to let the writer express his own ideas freely:—

"A SUGGESTION TO FORM A GARDENERS' WORLD-FRATERNITY."

Encouraged on several sides, I venture to bring the above proposition before the public, trusting that it may lead towards the realisation of the plan. The achievement of the aim would certainly be a great step forwards, and the helpful conditions of our time favour more than ever such a move. It can only be wished for that one of the oldest and noblest callings should gain a still greater influence in accordance with its important rôle. Especially recently great efforts have been made to advance horticulture, and make the general public more acquainted with it; the many good results arrived at ought to encourage strongly a larger move.

The very character of our profession demands more or less an international exchange of ideas; does this fact not naturally point towards the formation of a great world-embracing brotherhood, which can serve itself twofold by creating an interest for plants all over the globe?

The outlook to accomplish the object is favourably assisted by the total absence of those questions which so often make the best intentioned international enterprises a failure. Of course, nevertheless many difficulties will be encountered, but hardly any of a stubborn nature.

The this year's 'World-Exhibition' in St. Louis may perhaps be a good assemblage field to start the project. In a few words I wish to give my opinion of how to form such a 'Fraternity': To have a basis as well as a medium of constant communication a paper should be issued, called perhaps the *World Gardener*, to be printed monthly, and in as many languages as subscribers warrant editions.

All branches of gardening ought to be treated in separate divisions, to make the finding of material, comprising every quarter of the globe, an easy matter. Illustrations ought to be very carefully selected.

Advertisements and market reports from all the main points should form a detachable appendix. It is also very important to have a trial-ground in connection with the paper.

Out of the many problems which could be taken up for the common benefit, a few may follow here:—

The introduction of a 'Standard Plant-Nomenclature' for gardeners, which at the present is much confused.

Publication of a 'Garden Dictionary' containing a catalogue of all plants in cultivation possessing practical value, including their synonyms.

Registration of all new plants, discovered or bred at the 'central office' of the fraternity, if they seem worthy of cultivation, and a possible trial as to their merits. The laying down of general rules regarding newly-bred plants, concerning the rights of breeders, &c. A multitude of other questions may be taken up as the work advances.

An excellent locality for a central office of such an undertaking seems to be Switzerland, as that is a small neutral country composed of various nationalities. Also as a trial-ground for plants offering many good points; and taken into consideration the marvellous natural scenery, it is almost bound to make an ideal 'centre-place.'

I should regard it with great satisfaction if the above lines would cause also others in their turn to give the project a thought and possibly improve upon it. A. L. Schwöerbel, *Landscape Architect, Boston, Mass.*"

LONICERA TRAGOPHYLLA* (see Supplementary Illustration).—This is one of Mr. WILSON's introductions to the nurseries of Messrs. JAMES VEITCH & Sons, at Coombe Wood. In that most interesting

establishment we saw it in the course of the summer, and were struck by its fine masses of yellow flowers set off by the glossy foliage. As it is in all probability quite hardy, having proved to be so up till now, it will, when distributed, be a great addition to our hardy climbers, suitable for clothing pergolas, covering walls or sheds, and for similar purposes. As the plant is new to cultivation, we append in a foot-note the technical description drawn up by Mr. W. B. Hemsley.

BULBS FOR THE ROYAL PARKS.—We understand that Messrs. CARTER & Co. have been requested by H.M. Office of Works to supply the bulbs required for the Royal Parks, and for the gardens at Buckingham Palace and Hampton Court.

THE NEW HALL.—Messrs. FRADELLE & YOUNG, 283, Regent Street, London, announce that they are now publishing a most interesting picture commemorating the above important event in the history of the Society. It is prepared from a photograph taken at the time His Majesty is declaring the Hall open, and the portraits of the KING and QUEEN, together with the President and prominent members of the Society, grouped near their Majesties, are rendered clearly and in good size. The following photographs are also published, in uniform size, 14 by 9 inches:—1. General view of ceremony (includes most of Hall, distant view of Royal group); 2. Sir TREVOR LAWRENCE reading the address (platform group only); 3. His Majesty the KING declaring the Hall open (platform group only); 4. Exterior view of the building; 5. Interior view of the Hall, showing the annexes; 6. General view of the first flower show; 7 to 12. Six views of chief exhibits at first flower show.

ROSE SHOW AT THE CRYSTAL PALACE.—We are informed that the Directors of the Crystal Palace Company intend to hold a Rose Show at the Crystal Palace next year (1905), at a date to be fixed later on.

ACADEMIC HONOURS FOR BOTANISTS.—Among those members of the British Association who were selected by the University of Cambridge to receive the honorary degree of Doctor of Science on the occasion of the recent meeting of the British Association were: Professor ADOLF ENGLER, Professor of Botany in the University of Berlin, the founder of an important botanical periodical, which he has edited for the last twenty-three years. He is the author of a comprehensive system of botany; he has given proof of his interest even in palaeontological botany; he has explored the flora of East Africa and of South America; has contributed to the revision of the latest edition of the classic work of VICTOR HEHN on the migration of plants from Asia into Europe, and commemorated the centenary of HUMBOLDT by an able work on the recent history of the geographical distribution of plants throughout the world, and is the author or editor of numerous first-class periodicals and monographs. Sir WILLIAM TURNER THISELTON-DYER, Director of the Royal Botanic Gardens at Kew, *Flora in studiis insignis*, was welcomed as the son-in-law of another distinguished botanist, Sir JOSEPH HOOKER, who had received an honorary degree at Cambridge thirty-eight years before. His name is associated with much excellent administrative work at Kew, with work on the Flora of Middlesex, and, as editor, with that of South and Central Africa.

THE LATE MR. THOMAS BLAIR, whose death was announced in our last issue, was born in the year 1819 at Aberdour, Fifeshire. After passing by various stages the different departments of the garden establishment, he at length found himself called upon to take charge of the exotic department at the Royal Gardens, Claremont. From there he removed to Largo House, Fifeshire, remaining for nine years. In the spring of 1862 he was recommended by Dr. LINDLEY to Admiral Sir GEORGE N. BROKE MIDDLETON, Bart., as head gardener at Shrubland Park, where the gardens under BLAIR were so excellent that their keeping was admired by all who saw them. An account of Mr. BLAIR, together with a portrait, was given in the *Gardeners' Chronicle*, p. 393, Sept. 25, 1875.

NETTING FOR FRUIT-TREES.—Messrs. Rushforth & Co., of Loughborough, have submitted to us a sample of their fruit-tree netting, which is well adapted not only to protect fruit trees from spring frosts, but also from wasps and other pests at this season, and for covering vineries and other structures.

DÜSSELDORF.—The Directors of the International Horticultural Exhibition which is being held this year at Düsseldorf have now issued their programme and schedule for the International Fruit Exhibition, which will be held from October 8 to 16 next, in conjunction with the Congress of the German Pomological Union, and in addition to these two important events a German show of market fruit and nursery garden goods. The last day of entry is September 15; no dealers are allowed to compete; no charge is made for entry or for space; and the exhibition authorities pay the cost of carriage of goods to Düsseldorf. The schedule is at once large and comprehensive, and is divided into 147 classes, over 100 of which are reserved for the thirteen sections into which the International Exhibition is divided. Collective exhibits are invited from countries, states, associations, and unions. There will be instructive educational exhibits, including specimens of the best early and late fruits from different parts, arranged according to the local dates of ripening; classes in which size and beauty or recent introduction will be determining factors in the awards. Fourteen classes each will be reserved for named varieties of Apples and Pears. Besides Apples, Pears, Nuts, and stone-fruits, there promises to be a great show of wine and dessert Grapes. Fruit in pots and table-decorations have also special sections devoted to them. Makers of boxes, baskets, and other packing methods have seven classes for their wares, and the exhibits of pictures, models, photographs, books, periodicals, and plans, all relating to pomology, should prove of great interest to the public as well as those for whose special benefit they will be gathered together. Schedules and forms of application may be had on application to FREIHERR A. VON SOLEMACHER, Burg Namedy, near Andernach-on-Rhine.

BOTANICAL EXPLORERS IN THIBET.—The opening out of hitherto unexplored ground in Thibet may result in the discovery of some new or rare plants. A botanical survey has already been made into Independent Sikkim and Thibet by the Superintendent (Major PRAIN) of the Royal Botanic Garden, Calcutta, and we hear that the results are satisfactory. Readers will recall the Abbé HUC's book—*Recollections of a Journey through Tartary, Thibet, and China, during the years 1844, 1845, and 1846*, and in the light of more recent expeditions the accounts of this early traveller have been confirmed. One of his botanical discoveries was the tree of Ten Thousand Images, said to have sprung from the hairs of Tsong-Kaba, the great Buddhist reformer. The Abbé says:—"This tree is still to be seen (in Kounbourn), at the foot of the mountain on which the principal Buddhist temple stands, and in a large square enclosure formed by four brick walls. Within this stands the wonderful tree, which appears of great antiquity; and though now not more than eight feet high, three men could hardly embrace its trunk. The wood is of a reddish colour and exquisite odour very much

* *Lonicera* (§ *Caprifolium*) *tragophylla*, Hemsley, n.sp.—Frut. scandens vel vagans, fere undique glaber vel cito glabrescens, ramulis floriferis gracilibus. Folia breviter petiolata vel sessilia (paria 3—1 superiora connata rotundata vel deltoidea) papyracea, oblonga, usque ad 4 poll. longa, rotundata obtusa vel interdum subacuta, basi cuneata, supra glabra, subtus glauca simul primum præcipue secus costam venasque puberula. Flores lutei 2½—3 poll. longi, pauci in capitulis terminalibus breviter pedunculatos dispositi; calycis dentes minuti, persistentes corollæ tubus angustus, leviter curvatus, limbo plus quam duplo longior, intus, basin versus, parissime puberulus; labiorum lobi rotundati; labium anticum, et videtur, incurvatum; stamina glabra; stylus glaber. Bacce non vise.

Hupch: Patung district, rare (A. Henry). Herb. Kew.—Closely related to *L. caprifolium*, Linn., differing in the longer, narrower leaves, fewer larger flowers, and other small details. So far as we know there is no allied species nearer than the Caucasus, the American species of this group being less like the present plant. *Journal of the Linnean Society*, 1888, p. 367, vol. xxiii.

resembling Cinnamon. We were told that during the summer, towards the eighth moon, it produces superb large red flowers; but what most excited our astonishment was really, as we had been before told it was, distinctly marked with a Tibetan character, sometimes lighter, sometimes darker than the leaf, but quite plain. After the most minute investigation, we could discover no traces of fraud on the part of the Lamas; and though, doubtless, people will smile at our ignorance, that will matter little if they do not suspect the veracity of our account." The markings on the leaves are now known to be caused by the growth of a lichen. The intrepid voyager arrived after many adventures at Lla-Ssa, "the metropolis of the Buddhist world, encircled by a multitude of grand old trees which form with the foliage a girdle of verdure around it. Two fine avenues bordered with magnificent trees lead to the temple." After but a brief stay the traveller and his companions were dismissed from the country and returned to the better known districts of China.

PLANTS IN SEASON.—We have received a fruiting branch of the interesting "Californian Chestnut," *Castanopsis chrysophylla* (see fig. 59, p. 145), kindly forwarded by Mr. R. LINDSAY, Kaimes Lodge, Murrayfield, Midlothian, who mentions that the fruits were taken from a small shrub about 2 feet in height, growing on the rockery at Kaimes Lodge. The Golden-leaved Chestnut attains its greatest size and beauty in the coast valleys of northern California, where it is one of the noblest and most beautiful inhabitants of the forests. The genus *Castanopsis* is intermediate in character between the Oak and the Chestnut.

— From Messrs. WARE's nurseries, Feltham, Middlesex, we have received three interesting plants:—

CASSIA MARYLANDICA.—A hardy perennial species, native of North America. It is plentifully covered with its yellow racemes of flowers, typical of the genus. The plants were raised from seed sown three years ago, and are now flowering for the first time. It requires a sheltered position, which accounts for the fact of Messrs. WARE's plant having been cut down annually.

SIDALCEA "ROSY GEM," a garden form of *S. malvifolia*. The flower-spikes are nearly a foot in length, carrying numerous deep lilac-coloured flowers. It should prove a useful addition to the herbaceous border.

PENTSTEMON SPECTABILIS.—A highly glabrous form of *Pentstemon*, which gives it a pronounced character from our other garden forms of the genus. The flowers are bluish-purple, the corolla being about 1 inch in length.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × URANIA, REHDER'S VAR.

THE original form of this fine hybrid between *C. × Io grande* and *C. Charlesworthii* was shown by Messrs. Jas. Veitch & Sons at the Royal Horticultural Society on June 4, 1901. A very large and showy form of it is now in flower with Frank A. Rehder, Esq., The Avenue, Gipsy Hill (gr., Mr. Norris). It is one of the best of the *C. Charlesworthii* crosses, like the other hybrids, showing much of the purplish-rose veining of *C. Charlesworthii* in the upper sepal, but with distinct evidence of both *C. Argus* and *C. Lawrenceanum*, which were the parents of *C. Io grande*, the latter giving fine size and substance to the flower. The broad dorsal sepal is white with a small green base, its surface bearing a showy network of dark rose-purple, the spaces between being flushed with rose. The broad petals are yellowish-green at the base and brownish-rose outward, the base and centre bearing dark chocolate spots; lip brownish-rose, staminode cream coloured, with purple in front and slight rose tint. The same cross has also been named *C. × Martin Calmzac*.

ROSA MOSCHATA.

AMONG the hardy climbing Roses this takes a pre-eminent position. It is entitled to this rank in virtue of its foliage, and especially of the profusion of its white flowers. Londoners need go no further than Kew to see it in perfection, but our figures were taken from a plant at Arundel Castle. Mr. Burbury tells us it has been planted about fifty-five years, and that it reaches to a height of 35 ft. on a Yew-tree, of which it has taken possession. It is sometimes called *R. Brunonii*, and is a native of the Himalayas.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

JUDGING GRAPES BY POINTS.—Long experience in judging exhibits by points or marks has shown me the inconvenience of being too liberal in granting marks under any circumstances. When the greatest number of points are granted, and there presently crops up something that is even better, the door is closed against increasing

bunch a peculiar shading, such as never obtains in well-finished bunches. Judging by one's remembrance of what really good bunches of this Muscat have been, and comparing that with the bunches in Mr. Shingler's collection, I should have given each bunch nine points. Apart from their imperfectly finished condition, good form, too, was lacking. However, no diverse pointing would have altered the ultimate decision. *Looker-on.*

PROFITABLE PEACH GROWING.—From time to time we hear of the most wonderful successes in fruit growing, &c., but I had the pleasure the other day, at the luncheon of a famous North of England flower-show, to hear of one feat which I think will take some beating. A well-known gardener from the county of York told his hearers he had a Peach-tree, Goshawk, four years old carrying fifty dozen fruits, or in other words 600 fruits. I must admit that my efforts as a fruit grower for thirty years have been poor indeed, as compared to this. *J. C. C.*

SCARLET-RUNNERS AND BUMBLE-BEES.—From many reports received this appears to be one of the worst seasons for Scarlet-Runners on



FIG. 62.—ROSA MOSCHATA AT ARUNDEL CASTLE: FLOWERS WHITE.

the marks because the maximum has already been given. I do not know what is the rule adopted at Shrewsbury in relation to the Grape pointing, but my practice, when pointing collections of vegetables, is to take each dish separately, starting with the best dish of any one kind in each collection, begin by giving to it the number of points to which it is entitled, though not necessarily the maximum number, unless the quality is of the highest. Then other dishes of the same kind are pointed lower, just as their merits require. Were that practice adopted at Shrewsbury, taking Muscat of Alexandria first, then Madresfield Court, Black Hamburg, Mrs. Pince, and so on, mistakes could not possibly occur. But even then it would be improper to put to the best dish of any kind the maximum number of marks which it was capable of obtaining, unless it was of the highest excellence. It is not enough that a bunch of any variety should be even the best of its variety in the show, because the standard for the year may be comparatively low. That was peculiarly the case with Muscat of Alexandria at Shrewsbury, the outer berries being very good and well coloured, but the inner and less exposed berries were still green, thus giving to each

record. As far as my own observation goes it is also a record season for bumble-bees, which I have never before seen in such numbers. Whether the one fact has any bearing on the other, I must leave others to decide; but there is a general idea, not a new one, that bumble-bees injure the Scarlet-Runner crop; and they pierce the calyx to reach the nectary instead of doing so in the legitimate way, by which fertilisation would most certainly be effected. I have to-day examined some hundreds of flowers, and in every case but one, and that a newly-opened flower, the calyces were pierced; but I have not been able to detect the slightest injury to the embryo pods. It may be that the injury to the calyx and flower prevents in some way the production of potent pollen, the result of which would be a failure of the crop. It almost invariably happens that the first few flowers of this crop fail to set their pods, but the growth is so rapid that with only a normal number of the bees about there would be scarcely time for them to do wholesale mischief, and fertilisation would be brought about by smaller visitants in the meanwhile. The idea that drought is wholly responsible is incorrect, for

robust and free-grown plants that have been well watered, mulched, and grown in well-manured ground are just as unfruitful as others that have had no special care. I heard from a friend of mine a few days ago that from five rows, or, in all, about 200 yards, he had not up to the middle of August picked a pod, and this in a most productive garden and from early-sown plants that had never received any check to growth, and which, except for lack of pods, looked as well as could be wished. Here we are not quite so badly off, but the crop can only be regarded as very poor, in spite of all, presumably, necessary attention. *J. C. Tallack.*

GRADUS PEA.—In answer to your correspondent "Devonian No. 2," I sowed Gradus Pea alongside of William the First, and it came into use just three days after the latter. There is no comparison between the flavour of the two. With regard to the question as to whether short-haulmed Peas give such heavy and continuous crops as tall-growing varieties, in my opinion tall-growing Peas produce by far the greatest

of your readers experienced anything similar with Peas this season, and if they can suggest any other cause for this disastrous effect. *G. F. T., Ryde.*

THE COLORADO DOUGLAS FIR.—Absence from home has prevented my writing before to say that the Douglas Fir figured in your pages on July 23 is not the typical Colorado variety. The photograph sent by Mr. Richardson for your illustration was taken from a tree sent by me from Dorset to Messrs. Dickson & Co., Edinburgh, to see if they could identify it with any form of the Colorado or some other species, and the reply I had from Mr. Massie was to the effect that it was either a variety of the Colorado or another Fir altogether, which he named, but which I forget, as his letter was sent to the owner of the plantation where the tree came from. Out of a whole plantation of supposed Douglas Fir, as supplied by a nurseryman, not more than fifty trees were true to name, and these average about 12 feet, while the spurious ones, as figured in your pages, hardly exceed 5 feet. The true Colorado Douglas

house carrying about 84 bunches, mostly averaging from 1½ to 3 lbs. in weight, and of first-rate quality. Any of your numerous enquirers who are troubled with the spot would be well repaid for their trouble in treating their Vines as stated. *A. King, Hurstwood Gardens, Haywards Heath.*

POTATO "QUEEN ALEXANDRA."—I wrote you last autumn about this promising Potato, raised by Mr. Coleman, of Bishop's Down Farm, Tunbridge Wells. It is a cross between Up-to-Date and Windsor Castle. The haulm is of a dwarf, sturdy character, evidently indicating a strong constitution. It was raised three years ago, and no diseased tubers of this variety have up to the present been seen. A Potato that was free from disease in 1903, with its excessive rainfall, may be considered disease-proof. One particular feature of this Potato is its fine keeping qualities, the eyes remaining perfectly dormant late in the spring. Some tubers sent me at the end of May cooked as white as they did at Christmas. I believe there is a great future for this Potato; it may possibly be the fore-runner of a race that will be strong enough in constitution to resist disease. *W. F. Bowman, 25, Cambridge Street, Tunbridge Wells.*

HERBACEOUS BORDER.

CAMPANULA MACROSTYLA.

ONE of the more distinct Bellflowers is *C. macrostyla*, a native of Asia Minor, which although only of annual duration, is sufficiently desirable as a garden plant to warrant its use in the herbaceous border. The plant forms a tuft a foot or more through, crowded with lovely white flowers, the segments of which reflex as the flower expands, with blue margins and the surfaces heavily netted with blue. The most remarkable feature is the torpedo-like style, which projects from 3 to 4 inches beyond the face of the flower. The leaves, stems and calices are sparsely hairy. It was exhibited at a meeting of the Royal Horticultural Society last July from the Burford collection. One can raise thousands of plants from seeds with little or no trouble, by simply treating them in the same manner as one would Canterbury Bells. In light soils they may last for two seasons.

KNIPHOFIA (TRITOMA) EXCELSA.

This is a new hybrid form of *Kniphofia*, remarkable for its enormous size and great vigour. It is one of the best of its kind so far introduced for waterside planting. For a small border it is too vigorous a grower. A few single crowns planted two seasons ago have made tufts a yard through, and each clump has borne a dozen spikes of flowers from 6 to 7 feet in height. In habit it closely resembles the equally vigorous Star of Baden-Baden, but *K. excelsa* is much more refined both in form and colouring. The flowers of the latter are of a vivid pale-crimson at the upper portion of the spike, changing to an orange colour as time goes on. The variety is of French origin, and is distinct from all others in its widely distended throat, so that the flowers may be described as narrowly bell-shaped. There are many sites in large gardens where a vigorous Torch-Lily such as this would be found useful, particularly where the plant is needed to give a long-distance effect.

KNIPHOFIA (TRITOMA) BREVIFLORA.

The majority of *Kniphofias* are valued more as stately garden plants for bold effect than as neat border subjects; but this pretty slender-growing species more closely resembles *K. Nelsoni* and *K. rufa*, in all save colouring, and is distinctly *Laehenalia*-like in its inflorescence. It is a rare species, but so delicately beautiful that it should become highly popular. Its roots, which are unusually thick for a small *Kniphofia*, suggests its requirements—a light dry soil and open situation. The leaves are grass-like and disposed in



FIG. 62. — ROSA MOSCHATA AT ARUNDEL CASTLE. (SEE P. 152.)

crops. In this garden for the last two seasons Alderman has been the best Pea I have had, and in each season I make it a second early. *T. M. Nelson, Lancashire.*

FAILURE IN GARDEN PEAS.—Since the beginning of June I have made three sowings of culinary Peas of three different varieties, and they have all rotted in the ground, so that now I am without Peas for use. I have never experienced anything like it before. They were all sown in the ordinary manner, the drills when drawn being well soaked with water before the Peas were sown. Until now I have been unable to account for this extraordinary failure, but thought perhaps that the wet season of last year was to blame for not sufficiently ripening the seed. However, that could not have been the cause, for at the ends of the rows, which were partially shaded by some trees, and consequently cooler, the Peas came through all right. I believe the excessive sun-heat which we have lately experienced, combined with the moisture in the drills, has had the effect of partially cooking the Peas before they had time to germinate, and hence the rotting. I made the fourth sowing, and have covered them with loose litter until they came through. I should like to know if any

has more or less glaucous leaves, and the habit of the branches is not erect, but somewhat horizontal, and the tree is squat. There was recently a whole quarter of this type of Fir in Messrs. Dickson's nursery, but it is not recommended for timber by that firm. *J. Simpson, Studfield, Sheffield.*

GRAPE SPOT, GLÆOSPORIUM.—For the past season or two our two houses of Muscat of Alexandria have been badly affected with the Grape spot, so often described in the *Gardeners' Chronicle*. When I came here last season a good half of the bunches were affected with spot and shanking, the first trace of the spot occurring about two or three weeks after thinning, and completely spoiling the appearance of the berries and bunches. In the early part of last autumn I removed 18 inches to 2 feet of the borders, and carefully preserved the roots, and filled up with fresh compost, as often recommended in your *Calendars*. I spread out the roots and covered them over with 9 inches of compost and kept them on the dry side till starting time in January; of course they started a trifle later than usual. This season we have not had more than three dozen berries affected, and shanking has disappeared. We cropped lighter this year, each

elegant tufts, from the centre of which a quantity of spikes arise to a height of from 2 to 3 feet, each bearing a dainty inflorescence of lemon-yellow *Lachenalia*-like flowers, rather densely packed together. In older tufts the flowers are fewer and more daintily disposed in looser spikes, and it is then that one sees the plant at its best. In all general characters it is the yellow counterpart of *K. Nelsoni*, with more flowers on a spike and longer stems. In *K. breviflora* the flowers are tubular, the lobes alone being reflexed, whilst the anthers and styles are at the throat. It is figured in *Botanical Magazine*, t. 7570.

HELIOSYSSON COOPERI.

Seeds of this handsome "Everlasting" were received for purposes of test from the Orange River Colony, and the plants, which flowered in the same year as sown, are probably of annual duration only. It has broadly lance-shaped leaves, sheathing at the base, about 6 to 8 inches long. The stems are freely branching, hard, woody, from 3 to 4 feet in height, bearing great quantities of golden-yellow, globular flowers, $\frac{3}{4}$ inch across. The petals are persistent and harsh to the touch, as in most of its kindred. The whole plant is covered with a thick, loose, woolly tomentum, which is also persistent. This species is well in advance of the more familiar annual "Everlasting" of gardens, forming a roundish bush a yard across, each branch bearing at least a dozen flowers. It does not appear to be in cultivation so far as I can determine.

MONTBRETIA "Geo. Davison."

There are few Montbretias that can vie with that called "Geo. Davison." There is not much to choose between the flowers of this new variety and some of the older ones, but the value of a border plant lies in its habit, its vigour, and its freedom, and here this Montbretia shows a great superiority over all others. The stems are freely produced from each corm, generally in clusters of three or four, and bear quantities of lovely pale orange flowers. The original plant was the only one of many hundreds that the raiser could consider a real break. In *M. Germania*, the next best Montbretia, the flowers lose much of their beauty, owing to the nodding habit, but in Mr. Davison's variety the flowers are held at right angles with the stem, and are thus much more effective. G. B. M.

BRITISH ASSOCIATION.

HEREDITY AND THE MENDELIAN HYPOTHESIS.

MR. WILLIAM BATESON, F.R.S., took for his address to the section of Zoology the facts of heredity and of variability of species as exhibited by the practical examination and experiment of "breeding." The breeding pen was to the zoologist, said Mr. Bateson, what the test tube was to the chemist, and he insisted that the investigation of the problems of heredity by experimental methods offered the sole chance of progress with the problems of evolution. When Darwin wrote his *Origin of Species*, that work, which crowned the great period in the study of the phenomena of species, seemed to be, paradoxically enough, the signal for a general halt. The treatise brought the origin of species fairly within the grip of human intelligence for the first time, but, perhaps because it seemed to imply that the specific differences in species were brought about only by the lapse of immense periods of time, it turned men's thoughts to other subjects that were more amenable to the limits of a human life's investigation, and so the wide field from which Darwin drew his store of facts had remained for some forty years unexplored.

HEREDITY IN STOCKS.

The first paper was by Miss E. R. SAUNDERS, on "Heredity in Stocks." She said that since the re-discovery of Mendel's work, experimental evidence of the purity of the germ-cells had been found in a rapidly increasing number of examples. Much of this evidence was derived from cases like those studied by Mendel, where the differentiating characters were related to each other as dominant and recessive. In other cases the results might be complicated by such phenomena as reversion, gametic coupling of distinct characters, interaction between characters in zygote (such that the second character was

not manifested unless the first were also present), resolution, disintegration, &c. Such cases required minute analysis, and several generations might be needed to elucidate them. In tracing the laws of heredity in garden stocks several such complications were met with. As a surface character, hoariness was dominant, glabrousness recessive. In other cases the result as regards hoariness and glabrousness was more complex owing to the different behaviour of various glabrous strains, which, as far as could be seen, differed only in flower colour. As to flower colour, various combinations of colours gave reversionary purple in the first generation. Purple might also be produced by two white parents if they belonged to strains differentiated by leaf-surface. Such purple cross-breeds might give a simple Mendelian result in the second generation, or a variety of new-colour forms might appear. This latter result was commonly seen when cream was one of the parental colours. Whether the appearance of these new forms indicated disintegration or simply recombination of pre-existing characters was still uncertain. Creams bred pure at once. Some whites were pure, others were heterozygotes with cream. The number of extracted recessive types resulting from a given union and their specific behaviours were not yet known. Experiment showed that one had to deal with—(1) reversion in colour; (2) reversion in a distinct character, leaf-surface; (3) interaction of the two characters in the zygote; (4) conceivably disintegration. The regularity with which all these phenomena occurred plainly indicated that even these complex appearances result from a fundamentally simple system of Mendelian segregation.

MR. A. D. DARBISHIRE gave some account of his experiments with mice. He showed that the so-called Mendelian phenomena were in rough outline describable equally well by the Mendelian and Galtonian formulae; that merely by applying the method of observation no definite result was to be expected; and that it was only by experiment that we could hope to attain definite knowledge of the particular theory of gametic purity, and the general doctrine of discontinuity.

HEREDITY IN RABBITS.

MR. C. C. HURST next described some experiments on heredity in rabbits. He said that an inbred pair of albino Angoras was crossed reciprocally with an inbred pair of Belgian hares, and the hybrid progeny were bred with one another for two generations. Four characters were under observation, each of which was inherited independently of the other.

DISCUSSION.

PROFESSOR WELDON, in opening the discussion, said that the points at issue, between the conception of alternative inheritance attributed to Mendel, and that formed by Galton, Pearson, and others, might best be illustrated by referring to the description Miss Saunders had given that day of one of Mendel's experiments. Mendel took a Pea of a race producing only seeds with green cotyledons, and crossed an individual of this race with an individual of another race, producing only seeds with yellow cotyledons. The seeds resulting from this cross produced plants of three kinds—a quarter of them produced green seeds only, a quarter produced yellow seeds only, and each of these sets of individuals was said to breed true. The remaining half of the plants of this generation produced seeds with the hybrid properties of their immediate cross-bred parents. Now, considering the way in which Mr. Galton had found that reversion occurred in other cases, we might regard the hybrids which made up half the segregation generation as reverting directly to their parents; of the remaining half, we might regard one series as reverting to the characters of the various green-seeded ancestors in various proportions, the other as reverting in a similar way to the various yellow-seeded ancestors, so that every generation of ancestry was represented, to a greater or less extent, the nearer ancestors more frequently, the remoter more rarely. Mendel's own view was a little obscure. He was translated by Mr. Bateson as saying that the yellow-seeded individuals reproduced the character of the yellow-seeded "parent form," and neither from these words nor from the German text could it be certain whether Mendel understood by "parent form" the typical condition of cotyledon-colour in the yellow-seeded race, or the seed-colour of one individual of that race. Mr. Bateson, however, and most modern followers of Mendel, adopted the view which Mr. Bateson expressed two years ago in a report to the Evolution Committee of the Royal Society, that so far as colour character was concerned, the green-seeded descendants of the hybrid, and the apparently true-breeding yellow-seeded forms, were not merely like, but identical with the pure individuals of green-seeded or yellow-seeded race used in making the original cross. The view attributed to Mendel paid attention to the last two only of the series of pure-bred ancestors. That of Galton and others considered that all the ancestors contributed, in various proportions, to the characters of the subsequent generations. If the description of the seed-colours observed were made with sufficient accu-

racy we might easily decide between these two hypotheses; but since the description "yellow" was purposely made so vague that it included all the yellow-seeded ancestors and all their yellow-seeded descendants, we could say, from the data given, that the descendants were like one ancestor only, to the exclusion of others. Each human being had almost certainly seven cervical vertebrae, so had each of his parents, and each of his grandparents. Surely he had no right for this reason to say that they were exactly like their fathers, and that their grandfathers had no share in determining their characters. In a case described by Mr. Bateson the looseness of the Mendelian descriptions was still more obvious. Each of the species included as *Lychnis dioica* had a hairy and a glabrous form. If these were crossed, the resulting plants were hairy; and the offspring of such hybrids were hairy or glabrous in Mendelian proportions. Now those hairy plants which were apparently "pure" bred, were said to be like the hairy plant used in making the original cross; but we were not told how hairy either plant was. He had himself counted the hairs on the leaves of pure-bred hairy plants, and found that the number per square centimetre of leaf surface might vary from about a dozen to 1,300. Now, if a pure-bred plant with 1,300 hairs per square centimetre were crossed with a glabrous plant, and if the offspring had on an average 500 hairs per square centimetre, were they "hairy" like their hairy parent, or were they completely intermediate between the hairy and the smooth parents used? Questions of this kind, which were vital to the Mendelian hypothesis, could not be answered without the adoption of finer methods of description and observation than any to which Mendelians at present condescended. The only kind of Mendelian statement which did directly answer some of the questions raised was the statement that some, at least, of the characters of hybrids must be regarded as reversions to the characters of fairly remote ancestors. The frequent existence of such reversion was, of course *prima facie* completely inconsistent with the idea that the characters of such hybrids might be regarded as due to the combination of "pure" determinants derived from their immediate parents. But it had been said that the numerical conclusions drawn from the Mendelian hypothesis agreed so closely with the observed distribution of the descendants of hybrid individuals, that these alone justified the conception of gametic purity. It was very easy with small series of results to devise a dozen hypotheses which fitted the observations sensibly as well as one another. He would give the expression which Professor Pearson has supplied for a particular case of colour inheritance in mice, studied by Professor Cuénot. Crossing albino and yellow mice, each of known ancestry, Cuénot obtained 81 albino mice, 34 yellow mice, 20 black mice, and 16 grey mice. The remarkable modification of Mendel's hypothesis which he had put forward to describe this result led him to predict 76 white, 38 yellow, 19 black, and 19 grey mice. This was in accord with observation; but Professor Pearson's prediction—82½ albinos, 31 yellows, 20½ blacks, and 17 greys—was still closer. In the great majority of cases the Mendelian expectation and that to which we were led by the work of Galton and Pearson were the same; and in those cases in which the expectation indicated by the two lines of thought was different, the evidence was not yet conclusive. What was wanted was more experiment, and, above all, a description of results so careful that the questions raised by the Mendelian hypothesis could be answered, instead of being masked and evaded by the adoption of loose and vague descriptive categories. Till such work had been done it was surely better to use only the purely descriptive statements of Galton and Pearson, without invoking the cumbrous and undemonstrable gametic mechanism on which Mendel's hypothesis rested.

MR. BATESON replied in detail to Professor Weldon's criticisms, maintaining that by the Mendelian hypothesis alone was it possible to draw together the vast number of observed facts which had seemed utterly incoherent. The Mendelians, on the one hand, claimed that Mendel's discovery was of supreme importance, bringing clearness into phenomena previously obscure. On the other hand, the Ancestrians declared this importance to be grossly exaggerated, asserting that laws based on Ancestry could cope with the same facts. To the Mendelians it appeared that the hypothesis of the Ancestrians were disposed of, and that the voluminous works based on those hypotheses had no scientific value. The matter was readily put to experimental proof. Professor Weldon had passed very lightly over the critical fact which finally settled the question—the purity of the characters of the segregated types. None of the various schemes of the Ancestrians had ever contemplated such purity, and all were totally unable to deal with it. Mendelian facts had first been disputed, and when their truth was admitted, it was sought to explain them away. The last attempt thus to explain away the fact of purity of type was that enunciated by Professor Weldon. He regarded it as "reversion." But if the "reversion" was so complete as to include even the purity of the parental type, such reversion was Mendelian segregation by another name. The second fact with which

the Ancestrians could not deal with the condition of those hybrids or heterozygotes, which though again and again crossed back with pure types, had always the same gametic constitution undiluted. The speaker illustrated this from the work of Mr. R. H. Lock on maize; using mongrel materials he had shown that as regards yellow and white grains the inheritance was of a normal Mendelian order. Further illustrations of the applicability of Mendelian principles to complex cases were given regarding Sweet Peas. These included one significant case in which sterility of the anthers behaved as a Mendelian character, and made it possible to discriminate two types of extracted whites almost certainly dissimilar in their powers of transmitting colour. Professor Weldon had asked whether the extracted types showed parental characters unchanged. It was astonishing that such a question could now be asked. Frequently the extracted types were identical with the pure. The question was entirely one to be answered case by case, according to the special sort of segregation which took place in each case. There were young men present who would look back on this discussion as a critical moment in the history of biology. It was said that other theories would cover the facts. He had been told in his day that antiseptics were all very well, but that the same results could be produced by "a good healthy suppuration." Without doubt in the old Regent House of the University disputants in the past had maintained the flatness of the earth before applauding crowds, much as Professor Weldon had to-day upheld the view of the Ancestrians. The paths of the heavenly bodies had been harmonised with the theory of a flat earth, as some of the facts of heredity had been with the law of Ancestry; but as the theory of gravitation had brought together great ranges of facts into one coherent whole, so had Mendelian theory begun to co-ordinate the facts of heredity, till then utterly incoherent and apparently contradictory.

PROFESSOR KARL PEARSON said that the great revolution which Francis Galton introduced into biological study was purely a difference of method. He taught biologists to look at the subject exactly. The introduction of methods of precision had nothing to do with Mendelism or Ancestral law. As a mathematician, he had seen the Mendelians produce figures without any attempt being made to show that the figures were consonant with the theory which they were supposed to illustrate. He believed that he had elaborated the most complete Mendelian system ever yet worked out. It was an extremely complete system, for when one came to consider a very large number of competing couplets, much mathematical knowledge was needed to work out the result. But what was the result? It led to general principles which were singularly like those proposed by Francis Galton from observation. But what he asked from the Mendelians was some definite theory that could be worked out. At present their theories could not be grasped; they were always changing in form and definition. If he could get hold of anything definite he would be perfectly ready to test it impartially, as a mathematician should when approaching biological problems. There was a great deal of work to be done on the Mendelian side, for that system was in a state of flux. This controversy could only be settled by investigation, not by disputation.

(Report of Discussion condensed from "The Times," August 20.)

(To be continued.)

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 23.—The fortnightly meeting of the Society was small, both with regard to the number of exhibits and the attendance of visitors. We have yet to see the resources of the fine Hall called upon to accommodate a large show, though doubtless the exhibitions in the autumn of British-grown fruit, &c., will afford an opportunity of doing so. The day was dull; notwithstanding this fact, the light in the building was excellent. The approach of autumn was evinced by several large exhibits of fruit; although still very immature, they portend the approaching season. Hardy flowers were again largely in evidence, and growers were reminded to look ahead by interesting exhibits of models of Narcissus cleverly executed in wax. Several large exhibits of tuberous-rooting Begonias were shown, the flowers being very brilliant. One of the most pleasing contributions was a fine display of Cactus Dahlias, arranged with such taste that they reminded one of an extensive table decoration. The Committees had little to adjudicate upon.

The FLORAL COMMITTEE recommended two Awards of Merit and one Botanical Certificate, the latter to a tall-growing Gladiolus, the species of which was not determined, though it was probably *G. primulinus*,

first described by Mr. Baker in the *Gardeners' Chronicle*, p. 122, August 2, 1890.

In the afternoon a lecture was given by Professor BOULGER on "The Preservation of Wild Plants."

Several new Fellows were proposed and elected as members of the Society.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. H. B. May, Richard Dean, James Hudson, John Green, G. Renthie, Chas. Dixon, Chas. Jeffries, Chas. Blick, J. W. Barr, Charles E. Pearson, W. P. Pearson, E. H. Jenkins, Chas. E. Shea, Robt. W. Wallace, Geo. Gordon, Amos Perry, and E. T. Cook.

An interesting group of plants, principally new introductions, was staged by Messrs. J. VEITCH & SONS, Chelsea. *Buddleia variabilis* Wilsoni, occupied the background, a handsome plant 15 or more feet in height, also *Senecio clivorum*, better flowered than at the last meeting, and *Aconitum scaposum pyramidale*, carrying numerous spikes of heliotrope flowers, greenish-yellow at the entrance to the throat. *Lilium Brownii* was flowering well in a basket, also the white variety *L. B. Colchesteri*.

Messrs. VEITCH & Co. also exhibited a group of *Dædalacanthus parvus* with corymbs of bluish-purple flowers, and a few plants of *Begonia* "Washington," which was given an Award of Merit at the last meeting.

A large exhibit was staged by Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, consisting of Ferns, Veronicas, *Campanula isophylla*, *Bouvardias*, &c., tastefully interspersed with small Palms and trained plants of *Lygodium japonicum*. The pleasing dwarf Rose Madame N. Levassieur was well shown in pots. *Pteris Childsii*, *Adiantum Farleyense*, and *Nephrolepis Piersoni* were displayed in groups of well-grown plants. A number of plants of *Veronica Hendersoni*, in varieties with white and purple flowers, made a pleasing show. A batch of *Lobelia cardinalis* var. *Victoria* was nicely in flower (Silver Banksian Medal).

Mr. CHAS. TURNER, The Royal Nurseries, Slough, sent a collection of thirteen vases of *Hibiscus syriacus*, in several varieties of colour; a vase of the autumn-flowering Rose, *Belle Vichysoise*, a useful climbing variety; *Clerodendron Bungei*, with its dense heads of crimson flowers; *Tamarix hispida æstivalis*, and *T. odessana*, the former receiving an Award of Merit; and a dish of fruits of *Rubus sorbifolia*, the "Strawberry-Raspberry," whose appearance was much in advance of its flavour.

One of the prettiest groups in the Hall was that displayed by Messrs. T. S. WARE, Ltd., Hale Farm Nurseries, Feltham, London. The exhibit was composed of Cactus Dahlias tastefully arranged in vases, *épergnes*, and on fancy stagings. A white table ground was used, and set off by such graceful plants as *Asparagus plumosus*, *Bamboos*, *Miscanthus*, &c. An edging of *Isolepis gracilis* gave a pretty finish to the display (Silver Banksian Medal).

Mr. H. SHOESMITH, Westfield, Woking, exhibited several fine varieties of Cactus Dahlias in vases. Mrs. Frances Wellesley (creamy-white), F. Stevenson (dark scarlet), Mrs. S. T. Wright (rosy-pink merging to a lighter centre), and W. Hopkins (blood-red), were the more commendable of this small collection.

Messrs. JOHN PEED & SON, West Norwood, London, set up a group of plants of *Gloxinias* in pots, and individual flowers in exhibition boxes. They were very meritorious considering the lateness of the season, and the blooms were of very pleasing colours. Small Palms and an edging of *Sibthorpia europæa* set off the group to advantage. Messrs. PEED also staged a collection of *Achimenes* adjoining the latter group (Silver Banksian Medal).

Mr. S. MORTIMER, Farnham, Surrey, brought several seedling Dahlias of the Cactus type, all of first-class quality—Mrs. M. A. Mortimer, Vivid (fiery red), Mrs. J. S. Brunton (fine deep yellow and good shape), Edith (dark purple), Royal Scarlet (a rather large and straggling flower of the colour indicated), and Blush Queen (rosy-pink). (See Awards.)

One of the large centre tables was almost filled with choice flowers of tuberous-rooting Begonias, staged by Mr. A. L. GWILLIM, Cambria Nurseries, New Eltham, Kent. The flowers were displayed in exhibition boxes, and were of the most lovely shades of colour, some of scarlet being especially fine. The collection consisted principally of double-flowering varieties, with a number of single flowers staged at one end of the group. All the varieties were unnamed. A suitable grouping of pot-plants of Begonias, Maidenhair Ferns, &c., at either end, and an edging of small Ferns and *Isolepis gracilis*,

gave a pleasing finish to this collection (Silver-gilt Banksian Medal).

A large group of tuberous-rooting Begonias was set up by Messrs. JOHN LAING & SONS, Forest Hill. The plants were arranged on the floor of the hall and staged with good effect, with a taller background sloping to the front of the group, which was finished off with a suitable edging of small foliage plants. The plants were carrying some commendable blooms, considering the lateness of the season, and Palms and other plants worked in for effect gave a pleasing finish to the group (Silver Flora Medal).

HARDY PLANTS.

Mr. M. PRITCHARD, Christchurch, Hants, set up a group containing many pleasing hardy flowers, prominent among which were a collection of *Gladiolus* spikes, a good batch of *Montbretias*, and fine spikes of *Tritomas* (*Kniphofia*). *Gaillardias*, *Phloxes*, *Campanula hybrida* var. *Isabel*, *Eriacas*, *Heleniums*, &c., were the principal members. *Clematis Davidiana*, *Alstromeria psittacina*, and *Hemerocallis* "Dr. Regel" were among the more interesting plants in this collection (Silver Flora Medal).

MESSRS. BARR & SONS, 11, 12, and 13, King Street, Covent Garden, W.C., staged a collection of herbaceous flowers in vases, and an interesting collection of models of Daffodils in wax. *Gladioli* were shown well. We noticed *Silphium laciniatum*, a tall-growing Composite. Two interesting plants were shown in fruit, *Actæa alba* and *Podophyllum Emodi*, the latter with its Tomatolike fruits adnate to the petioles. Trays of hardy *Nymphaeas* occupied the centre of this group (Silver Banksian Medal).

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, London, N., set up a group of hardy flowers in season. Some good forms of *Pentstemon barbatus* were included; several trays containing hardy *Nymphaeas*, *Montbretias*, *Tritomas*, *Chelone obliqua*, *Phloxes*, *Liliums*, and a host of members of the order Composite—*Rudbeckias*, *Chrysanthemums*, *Senecio clivorum*, &c. (Silver Banksian Medal).

MISCELLANEOUS.

A very pretty basket of wild flowers was arranged by Miss EASTERBROOK, Fawkham, Kent, in which were many of our familiar native flowers—*Teasle*, *Toadflax*, *Harebell*, *Clematis vitalba*, *Water Mint*, &c. (Vote of Thanks).

A seedling *Lobelia* named "oculata" came from Mr. G. KENT, Norbury Park Gardens, Dorking.

Two seedling *Gladioli* came from Mr. W. C. BULL, Ramsgate. *Iona* has pleasing soft pink flowers splashed with a deeper red at the margins; *Valerie* has large creamy-coloured flowers with a darker, almost yellow, throat.

FRANCIS FOX, Esq., Alyn Bank, Wimbledon, exhibited *Gladiolus primulinus* (?). The plant's natural habitat is in the regions of the Victoria Falls, on the river Zambesi, the spray of the water covering the plant at times, from which the pollen and stigma are said to be protected by the posterior segment of the perianth, which hangs in such a manner as to conceal the essential organs. The plant has received the name of "Maid of the Mist." (See Awards.)

Messrs. FELTON & SONS, 7, 8, and 9, Hanover Square, W., staged a group consisting of early-flowering *Chrysanthemums*, several pleasing vases of border *Carnations*, and an *épergne* filled with *Chrysanthemum maximum*, variety King Edward.

AWARDS.

Tamarix hispida æstivalis.—A pleasing shrub, with long, feathery racemes of delicate pink colour and light, feathery foliage, the inflorescence reminding one somewhat of a loose-panicked *Astilbe*. An excellent plant for gardens near the coast. Exhibited by Mr. CHAS. TURNER, Slough (Award of Merit).

Dahlia Blush Queen.—A Cactus variety with pleasingly-quilled petals of striking rosy-pink colour merging to a lighter centre; flower of large substance. Exhibited by Mr. S. MORTIMER, Farnham, Surrey (Award of Merit).

Gladiolus primulinus (?). A tall-growing species above alluded to, with peduncles 2 to 3 feet in height, bearing six or more primrose-yellow-coloured flowers, the posterior segment forming a hood covering the stamens. The segments on either side are reflexed, and the anterior segment is also reflexed. Bracts lanceolate green and sheathing. Leaves long, linear, 2 to 3 feet in length, an inch in width, with one or more prominent veins running the entire length to the apex. Shown by FRANCIS FOX, Esq., Alyn Bank, Wimbledon (Botanical Certificate).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; Jas. O'Brien (Hon. Sec.), De E. Crawshaw, J. Gurney Fowler, H. A. Tracy, H. Little, F. Wellesley, F. J. Thorne, G. F. Moore, W. Boxall, J. Douglas, A. Hislop, J. W. Odell, J. Charlesworth, M. Gleeson, W. Cobl, and T. W. Bond.

Only one group was staged, and although several good things, over which there was some deliberation, were shown, no award was made. The group, which for the season was very creditable, was staged by H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr., Mr. G. E. Day). The best plants in it were *Laelio-Cattleya* × *Massangiana* var. *Harry Goodson* (*L. tenebrosa* × *C. Schilleriana*), a great improvement on that previously shown. The sepals and petals were of a bronzy hue, the showy, circular-fronted labellum bright ruby-purple; and *Cattleya Harrisoniae* H. S. Goodson, a very fine bright rose-coloured flower with reddish-claret spots on the sepals and petals. Among the *Cypripediums* were *C. Curtisii*, *C. × superciliale*, a very singular narrow form of *C. Dayanum*, *C. Chamberlainianum*, *C. Mastersianum*, *C. Lawrenceanum*, *C. × Evadne*, &c. *Epidendrum prismatocarpum* and *Oncidium crispum* were also shown.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cypripedium* × *Bella* (*vexillarium* × *philippinense*), a pretty hybrid with the graceful form and delicate colour of *C. × vexillarium*, enlarged by the other parent used. Upper sepal white flushed with rose, and bearing dark purplish lines; petals broad and long, decurved, ciliate, with chocolate-coloured spots on the upper edge; rose-coloured and whitish at the base. Lip and staminal greenish, with obscure darker markings. Lower sepals whitish, with green lines.

Captain G. L. HOLFORD, C.I.E., C.V.O., West-birt, Tethury (gr., Mr. H. Alexander), again showed the beautiful *Cypripedium* × *Milo*, Westbirt variety, for which an Award of Merit had previously been given. The upper sepal is green on the lower half, white above, and with dark chocolate spots. Petals and lip reddish-brown, all the surface being glossy. Also *Cattleya* × *Germania superba* (*granulosa* Schofieldiana × *Hardyana*), a fine hybrid, with rose-purple flowers, the front lobe of the lip being purplish-ruby-red.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), showed *Cattleya* × *Admiral Togo*, a fine hybrid of *Cattleya Schilleriana*, with some resemblance to *C. × Miss Harris* (*Schilleriana* × *Mossiae*). The flowers bore strong traces of *C. Schilleriana* and were of a bright lilac-rose, the fine labellum having purple veining, a narrow margin of lavender colour, and a tinge of yellow in the centre.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. Smith), showed his new *Masdevallia* × *Veitchiofragrans* (*Veitchiana* × *fragrans*). The seed-bearing parent was *M. Veitchiana*, and much of its habit remains in the hybrid, which has thicker leaves than those of *M. Veitchiana*, and traces of the *M. coriacea* section, to which *M. fragrans* belongs, in both leaves and flowers. The scape is ascending, 4 inches in length, green spotted with purple. The flower is of thick texture, the perianth yellow, the outside of the tube bearing purple lines, and the face of the flower numerous purple papillae. The upper segment has an erect yellow tail 1 inch in length, and the lower slightly shorter ones, which are crossed in front.

Fruit and Vegetable Committee.

Present: Jas. Cheal (Chairman), and Messrs. W. Bates, S. Mortimer, Alex. Dean, R. Lewis Castle, J. Lyne, G. Norman, F. Q. Lane, J. Jaques, and W. Pompart.

Messrs. H. CANNELL & SONS, Swanley, Kent, staged a collection of Apples, Pears, and Plums in dishes, with a number of well-fruited trees at the background. The group was relieved with epergnes of fruit and small foliage plants, several vases of *Rubus phoenicolasius* (the Wineberry) being worked in the exhibit. Among the Apples *Lady Sudeley* was good, *Beauty of Bath* finely coloured, *Peasgood's Nonsuch* of large size; *Red Astrachan* was also shown in good form; *Lord Grosvenor*, *Duchess of Oldenburgh*, and *Beauty of Bath* were also commendable; several seedling varieties were included. Plum *Gisborne's Yellow* was well finished. Among the Pears were good specimens of *Beurré Giffard* and *Madame Tréve* (Silver Knightian Medal).

Another collection of Kentish-grown Apples came from the well-known grower, Mr. G. HUNYARD, Maidstone. Considering the earliness of the season, the

fruit was excellent and indicative of the splendid crops promised this season. Baskets and dishes were utilised to display the varieties, which, among others, included *Lady Sudeley* (large fruits of good colour), *Stirling Castle*, *James Grieves*, *Duchess of Oldenburgh*, *Worcester Pearmain*, *White Transparent* (large light-coloured fruits); well-coloured fruits of *Gladstone*, *Langley Pippin*, *Ecklinville Seedling*, *Yellow Ingestre* (almost ready for the table), and *Cardinal*. A seedling Apple of much promise, named *Bielo Borodawka*, was shown. It is said to be a splendid cropper and of good quality (Silver Knightian Medal).

Messrs. SPOONER & SONS, Hounslow, also set up a meritorious collection of hardy fruit, including Apples, Pears, and Plums. The exhibits were arranged in baskets, boxes, and dishes, and contained well-grown members, forecasts of still finer produce later in the season. Of Apples, *Stirling Castle* were good, as were also *Grenadier* and *Worcester Pearmain*. *Red Quarrenden* was of large size, although somewhat lacking in colour; *Lady Sudeley* was finer coloured than the latter, and the size of the fruit was also excellent. A large box of *Early Transparent* Gage contained excellent fruits of this delicious Plum (Silver Banksian Medal).

Messrs. JOHN PEED & SONS, Roupell Park Nurseries, West Norwood, showed six dishes of Apples and five dishes of Pears. *Pears Clapp's Favourite* were good, and *Lawson's July* well coloured.

MISCELLANEOUS.

From the Royal Horticultural Society's gardens at Wisley came fruiting branches of *Prunus cerasifera* in several varieties.

New Tomatoes were brought by Mr. J. B. OLDHAM, Easingwold, and Colonel SIMPSON, Shirley House, Croydon (gr., Mr. Cook).

W. ROUPELL, Esq., Harvey Lodge, Roupell Park, sent a fine basket of *Lady Sudeley* Apples, of good colour and size (Cultural Commendation).

A dish of *Peach Sea Eagle* of large size was shown by Colonel SIMPSON, Shirley House, Croydon (gr., Mr. Cook). Lack of colour detracted from the appearance of the fruit. Several Melons were presented for the consideration of the Committee, but none were equal to the standard required for an award.

Mr. WM. DEAL, Brooklands, Kelvedon, brought dishes of *Potato Excelsior*, and of a new Runner Bean named *Brooklands Scarlet*.

The Lecture.

THE PRESERVATION OF WILD PLANTS.

Dealing first with natural causes of loss to our indigenous flora, Prof. BOULGER touched on climatic change and encroachment by the sea, the latter strikingly illustrated in East Kent. He then passed on to such artificial causes as appear inevitable from increase of population, viz., forest clearing, wastefully carried out as it has been, the wholesale sacrifice of economic plants such as the *Sandalwoods* and *Gutta-percha* trees, drainage and fen-reclamation, the extension of the area under cultivation, the extermination of weeds, the growth of buildings, and quarrying. Losses due to each of these causes were specified. Among avoidable causes of loss he then discussed the artificialising of our country lanes, golf, the smoke nuisance, collectors of plants for sale (with special reference to the *Primrose*, *Ferns* and *terrestrial Orchids* in England, and to *Lygodium*, *Galax*, *Kalmia*, and *Epigaea* in the United States), children, excursionists, school-teachers, and botanists. Among protective measures the concealment of habitats, their enclosure, the cultivation of wild forms, transplanting rarities, re-introductions, education and legislative action were then discussed, the lecture concluding by urging the promotion of an Act of Parliament on the lines of those for the protection of birds.

In the discussion which ensued, Mr. E. A. MARTIN doubted whether anything could be effected by legislation; and Professor L. H. BAILEY spoke of the success of the legislative protection of individual species in the United States when backed by popular sentiment.

EDINBURGH SEED TRADE ASSISTANTS'.

AUGUST 13.—By the kind invitation of Messrs. Bell & Bieherstedt, Leith, the Seed Trade Assistants were on the above date afforded an opportunity of visiting the trial grounds, and were there received by the manager of the garden-seed department, Mr. William Smith, in the absence of the principals. One of the principal features of the trials was upwards of 260 rows of Sweet Peas, which were arranged according to colour.

SHEFFIELD FLORAL AND HORTICULTURAL.

AUGUST 6.—The fifth annual exhibition of this Society was held on the above date in the charming grounds of Holly Court, Sheffield, by kind permission of F. A. Kelly, Esq. The exhibits were arranged in two spacious tents. The Roses were good. Groups of plants were very fine, vegetables meritorious (particularly Onions), whilst the floral devices and table decorations were excellent. Some fine Grapes were shown, also Peaches, Melons, and collections of fruit. Trade exhibits of herbaceous flowers were numerous, while groups of plants not for competition were arranged down the centre of the vegetable tent. On the whole the show was excellent, and reflected the greatest credit on the Society's energetic Secretary (Mr. Lewendon) and his committee.

SCOTTISH PANSY AND VIOLA ASSOCIATION.

(HELD AT GLASGOW.)

AUGUST 10.—The usual monthly meeting of the above Society was held on the above date. The following were the awards:—

Fancy Pansies.—First-class Certificates: Mrs. W. Sinclair (DOBBIE & Co.), Einnie Bateman (DOBBIE & Co.). Certificates of Merit: Peggie Smith (DOBBIE & Co.), Dr. McDermott (KAY), Jessie L. Arbuckle (KAY), A. K. Brown (KAY), and Miss Turnbull (McLAUCHLAN).

Show Pansies.—First-class Certificate: Mrs. Fife (DOBBIE & Co.), white self. Certificates of Merit: Katie (DOBBIE & Co.), yellow self; A. W. Paterson (DOBBIE & Co.), white self; Jane Stirling (DOBBIE & Co.), primrose self; Jessie Findlayson (KAY), white-ground.

Violas.—Certificates of Merit: Lady Grant (FRATER), Mrs. James Lindsay (CAMPBELL), Effie (DOBBIE & Co.)

Chrysanthemum.—Certificate of Merit: Thomas Cullen (JOHNSTONE), a sport from Mytchett White.

Lobelia.—First-class Certificate: Blue Jacket (R. & A. AITCHISON).

LUTTERWORTH GOOSEBERRY SOCIETY.

THE eighty-sixth annual show was held at the Greyhound Hotel, Lutterworth, recently. Mr. F. W. Bottrill officiated as weigher, and declared the following awards:—

Open Class.—Heaviest berry, any colour, Mr. W. C. Payne's Ringer, 22 dwt. 2 gms. Steward's prize for second heaviest berry, Mr. W. Granger's Ringer, 21 dwt. 13 gms.

Class Colours.—Reds: Mr. W. Granger's Bobby, 20 dwt. 9 gms.; Mr. W. C. Payne's London, 20 dwt. 5 gms.; Mr. C. Payne's Jumbo, 20 dwt.; Mr. F. Knight's London, 17 dwt. 5 gms.; Mr. T. C. Bodycote's Bobby, 17 dwt. 5 gms. Yellows: Mr. W. C. Payne's Ringer, 22 dwt. 11 gms.; Mr. W. Granger's Garibaldi, 19 dwt.; Mr. T. C. Bodycote's Leveller, 18 dwt. 3 gms.; Mr. C. Payne's Lady Howard, 16 dwt. 5 gms. Greens: Mr. W. Payne's Surprise, 21 dwt.; Mr. W. Granger's Surprise, 16 dwt. 22 gms.; Mr. C. Payne's Surprise, 17 dwt. 1 gm.; Mr. T. C. Bodycote's Surprise, 17 dwt. Whites: F. Knight's Hero-o'-Nile, 20 dwt. 12 gms.; Mr. W. C. Payne's Fascination, 19 dwt.; Mr. W. Granger's Fascination, 18 dwt. 7 gms.; Mr. C. Payne's Transparent, 17 dwt. 23 gms.

Twins.—Mr. W. C. Payne's Surprise, 32 dwt. 3 gms.; Mr. C. Payne's Surprise, 25 dwt. 12 gms.

Mr. T. C. Lawrie's special prize for four dishes of berries, not less than three colours (eight berries on each dish).—1st, Mr. W. Granger; 2nd, Mr. C. Payne; 3rd, Mr. W. C. Payne. *Leicester Post*.

DUTCH HORTICULTURAL AND BOTANICAL.

FLORAL COMMITTEE—JULY, 1904.

FIRST-CLASS CERTIFICATES

were awarded to *Chrysanthemum maximum* King Edward, as a newly imported plant, from M. W. v. VEEN, of Leiden; *Rosa Farquhar*, as a newly imported plant, from Messrs. M. v. WAVEREN & SONS, of Hillegom; *Dianthus caryophyllus* fl.-pl. Kaiserin Friedrich, as a newly imported plant, from Messrs. WEZELENBURG & HASJEN, of Leiden; *Disa grandiflora splendens*, from Mr. C. J. KIKKERT, of Haarlem; *Rosa Souvenir de Pierre Notting*, as a new plant, from Mr. J. ABING, at de Bildt; *Rosa Madame Jules Crolez*, R. Johanna Sebus, R. Farben koningin, from Messrs. GRATEMA BROTHERS, of Hoogeveen; and *Stock Dresdener Pyramide*, as a new plant, from Mr. F. PIET, Jr., of Apeldoorn.

CERTIFICATES OF MERIT

to *Phlox decussata* Marie Wilkens, as a newly imported plant, from Mr. W. v. VEEN, at Leiden;

P. d. Madame Neera, P. d. Edmond Aniran, *Coleus Kniperi*, as a new plant, from Mr. W. KNIPER, of Apeldoorn; *Lathyrus latifolius roseus superbus*, as a new plant, from Mr. W. v. VEEN, of Leiden; *Dianthus caryophyllus fl. pl. Malmaison* (red) and *Standard Jeanne d'Arc* (pure white), from Messrs. V. NAMEN BROTHERS, at Zwijndrecht; and *Pelargonium peltatum* Paden-Powell, as a newly imported plant, from Mr. J. G. BALLEGO, of Leiden.

BOTANICAL CERTIFICATES

to *Dierama pulcherrima*, as a new introduction, from Messrs. DE GRAAFF BROTHERS, Ltd., of Leiden; *Gladiolus colvilloides*, as a new plant, from the same firm; *Codonopsis viridiflora*, as a new introduction, from Mr. W. v. VEEN, of Leiden.

A SILVER MEDAL

to a collection of *Gladiolus nanus* (cut blooms), from Messrs. H. ROOZEN & SONS, at Sassenheim; and to a collection of annuals from Messrs. GROENEWEGEN & Co., of Amsterdam.

A BRONZE MEDAL

to a collection of cut blooms from herbaceous plants, from Mr. W. v. VEEN, of Leiden; and to a collection of annuals, from Messrs. SLUIS & GROOT, of Enkhuizen.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

AUGUST 11.—At the meeting held on this date, G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr., Mr. Shill), was awarded a First-class Certificate for *Cypripedium* × *Sanderiano-superbiens*, a fine and striking hybrid, which shows its parentage very distinctly.

S. GRATRIX, Esq., Whalley Range, Manchester (gr., Mr. Cypher), exhibited a hybrid between *Cypripedium Mastersianum* × *Lawreanum*.

NORMAN C. COOKSON, Esq., Wylam-on-Tyne, exhibited *Odontoglossum crispum* var. *Munyanum*, a well-known and valuable variety; this plant was voted a First-class Certificate and a Silver Medal. *Cattleya* × *Atalanta*, *Oakwood* var., from the same collection received a First-class Certificate.

PHILIP SMITH, Esq., Sale (gr., Mr. Kitchen), exhibited *Cypripedium* × *May Proctor*, a cross between *C. Charlesworthii* × *C. Curtisii*.

T. STATTER, Esq., Whitefield, obtained an Award of Merit for *Cypripedium* × *calloso-Lawreanum*.

Messrs. CHARLESWORTH & Co., Bradford, Yorks, staged a good group of hybrid Orchids, to which a Silver Medal was awarded. Noticeable in the group were *Cattleya* × *Iris*, *Cypripedium* × *Io maximum* var. *magnifica*, *Cattleya* × *Germania*, *C.* × *Mary Gratrix*, *C.* × *Lord Rothschild*, *C.* × *Hyades*, *Laelio-Cattleya* × *luminosa*, *L. C.* × *callistoglossa*, a fine form.

The next meeting will be held in conjunction with the Dahlia show at Old Trafford on September 9 and 10. P. W.

FELLING.

AUG. 15, 16.—The twenty-fifth annual exhibition of the Felling Floral and Horticultural Society was opened at Felling. The entries were from all parts, and were as numerous as in previous years, and exhibits were of the highest quality.

The exhibits of Messrs. HARKNESS & SONS, of Bedale, in the open class, were remarkable, they having won the Higginbottom Challenge Bowl for twenty-four cut Roses, defeating R. GARDNER of Whickham, the holder. Equally remarkable were the table decorations exhibited by JAMES SUMMERS of Sunderland, for which he was awarded the Members' Silver Challenge Bowl for the third successive year. THOMAS BATTENBY, of Blaydon, was awarded the Tradesmen's Silver Challenge Bowl, for eighteen Dahlias, twelve dissimilar, he defeating Messrs. HARKNESS & SONS of Bedale, the holders. Other principal prize takers were:—F. EDMUNDSON, Nurseryman and Florist, Newcastle; JOHN ARKLESS, Gateshead; J. ELLISON, Shankhouse; R. GARDNER, Whickham; A. WINTER, Corbridge, &c.

ENGLISH ARBORICULTURAL SOCIETY.

ANNUAL MEETING.

ON Tuesday evening the 16th inst., the twenty-third Annual Meeting of the members of the Society was held in the Palace Hotel, Aberdeen.

The Secretary reported that the number of members at the commencement of the year was 675. During the year there had been twenty-one resignations and four deaths. The new members elected for the year numbered 91, bringing the total membership of the Society to 741.

The Treasurer reported that the receipts for the year amounted to £347 10s. 4d., and the expenditure to £209 5s. 3d.

The Chairman proposed that Prof. Fisher, Cooper's Hill, be elected his successor as President of the

Society. Those members who went to France two years ago to the annual meeting knew how very successfully Prof. Fisher had arranged those proceedings.

The President proposed a very cordial vote of thanks to the Hon. Mark Rolle, Stevenstone, Torrington, Devon, for the very handsome gift he had presented to the Society in a collection of forest and ornamental seedlings and transplanted Fir-trees, which were exhibited in the forestry section at the Park Royal Show, Willesden.

Wednesday, Thursday, Friday, and Saturday were devoted to excursions to Durris House Estate, Haddo House, &c.

EASTBOURNE.

AUGUST 17.—The flower show held in the beautiful grounds of His Grace the Duke of Devonshire is an important local event. The exhibits on this occasion were displayed in three large tents, all of which were well filled, and it may be said of the exhibits as a whole that they were of excellent quality.

In the open class for groups the competition was close. Mr. G. T. SCOTT took 1st prize with a pleasing arrangement, in which were used some very fine Lily of the Valley in pots, Lilliums, *Verbena Miss Willmott*, *Celosias* of a fine strain; the foliage consisted of some good *Eulalias*, green and variegated; a pair of *Dicksonia antarctica* stood in the foreground. The 2nd prize went to Mr. W. E. HOLLANDS, of Tunbridge Wells, who had a novel arrangement, the background being made up as a wall of choice Ferns and flowers, and the foreground had a good base of Ferns with fine *Codiaeums*, *Caladiums*, and other foliage and flowers standing up. Mr. DURRANT YOUNG, who came in a good 3rd, had good foliage plants, and *Begonias* of a good type were prominent, together with *Tuberoses*, and *Oranges* with ripe fruit.

For group of Ferns, Mr. SCOTT was again 1st, having a pretty arrangement, *Adiantum Farleyense*, *Nephrolepis Piersonii*, *Davallia Veitchii*, *Adiantum macrophyllum bipinnatum*, and *Gymnogrammas*, with good Tree Ferns in the background.

Near these was a grand group from the Duke's garden. Mr. May, the gardener, had a beautiful arrangement of three semi-circular groups, with a continuous background. The grand plants of *Campanula pyramidalis* constituted the chief feature, together with well coloured *Codiaeums*, *Caladiums*, *Fraxinea ramosa*, *Achimenes*, and other flowers with a good setting of foliage, in which *Vitis heterophylla* was effectively used. This group was not for competition.

From the gardens of JOHN WARREN, Esq., Hand Cross Park, Sussex, came some splendid exhibits. The six Ferns which took the 1st prize were of immense size and very fresh and healthy, the *Davallias polyantha* and *D. Mooreana* being specially fine. The six foliage plants were equally fine—*Cycas revoluta*, *Phyllotanium Lindeni*, and large specimens of *Kentia australis*. In flowering plants the same exhibitor was equally strong. It is some time since we have seen such fine plants of *Ixoras*, *Bougainvilleas*, *Allamandas*, and *Lapagerias*.

Cactus Dahlias were well shown by trade growers. Mr. F. W. SEALE, Sevenoaks; Messrs. J. CHEAL & SON, Crawley; and Messrs. STREDWICK & SON, of St. Leonards, all having good blooms, including several new sorts.

Pompon and single Dahlias were well shown by Mr. SEALE and Messrs. CHEAL & SON, the honours being divided, each gaining a 1st and 2nd.

Messrs. GEO. BUNYARD & Co., of Maidstone, staged a large collection of hardy flowers, including a fine lot of *Kniphofias* (*Tritomas*), herbaceous *Phloxes*, *Statice*, *Liliums*, and others. From the same firm came twenty-five dishes of Apples, all good examples of the early varieties.

Messrs. A. CHARLTON & SON, of Tunbridge Wells, showed a good collection of Cactus Dahlias and hardy flowers.

In the competitive classes for hardy flowers, Sweet Peas in twelve sorts were well shown by four exhibitors, and *Phlox Drummondii* by six exhibitors.

Table Decorations were a great feature; also bouquets.

Roses from Mr. W. J. WOOLLARD and WILL TAYLER, of Hampton, were good.

Grapes.—In these there was a good competition. The 1st prize for a single bunch, also for three bunches of Black, went for Black Muscat; but Madresfield Court was equally fine, some bunches of it being shown in a collection of fruit from Polegate. Muscat of Alexandria was best finished and a good 1st. Some fine bunches of Canon Hall Muscat were not quite ripe enough. Melons were very numerous; the 1st prize went to Frogmore Scarlet, a very fine Melon. Of Nectarines, Pineapple was the best shown; and Dymond the best Peach. Apples and Pears were numerous. In the 1st prize for three dishes, dessert, Irish Peach, Lady Sudeley, and Red Astrachan were the sorts shown. In culinary varieties the best were The Queen, Ecklinville, and Peasgood's Nonsuch. Tomatoes were shown in many varieties, the best being Improved Comet, Prince of Wales, and The Cropper. Cucumbers were equally numerous, Sutton's A 1 being the best seen.

In Potatoes the best round was White Globe, and the best kidney Up-to-date. Collections of vegetables were remarkably good.

Altogether the show was a very attractive one, and the private gardens of His Grace being open to visitors formed an additional attraction.

TROWBRIDGE HORTICULTURAL.

TROWBRIDGE can boast that it has held an annual flower-show for the space of fifty five years. It can also boast that local cultivators can turn out some of the finest specimen Fuchsias seen in the country, and also that the greater part of the plants and cut flowers seen at its shows are grown in the locality. Its fifty-fifth exhibition was held on the 17th inst., in the show field, and it was in all respects a thoroughly good one, but the drenching rain much interfered with the attendance. Happily the Society has a good reserve fund.

The *Fuchsias* always have the place of honour in the schedule of prizes, and they were as finely exhibited as usual. The best six specimens were shown by Mr. F. T. FOXCROFT, Hinton Charterhouse (gr., H. Chislett), the dark and light varieties being alike finely grown and bloomed; Mr. H. POCCOCK was 2nd. *Western Beauty* was one of the finest late varieties. With four specimens Mr. CHISLETT was again 1st, and Mr. GEO. TUCKER, 2nd. Some well grown and bloomed plants were shown by working men.

Store and Greenhouse plants were a good feature; there were three collections of nine specimens, all locally grown. Mr. GEO. TUCKER came 1st; Mr. W. J. MANN, Trowbridge (gr., H. Matthews), was 2nd. With six specimens, Mr. Matthews came 1st, having among them a fine piece of *Erica Eweriana*; Mr. E. H. ATCHERLEY, Trowbridge, was 2nd. With three specimens, Mr. GEO. TUCKER won the 1st prize, Mr. H. MATTHEWS, 2nd. All the specimens showed good culture. Single specimen plants were also shown, and other flowering plants consisted of admirably-grown specimen zonal *Pelargoniums*, also single and double *Begonias* in excellent character, &c.

Groups arranged for effect filled a tent; in both classes Messrs. J. CRAY & SON, Frome, were placed 1st.

Fine foliaged Plants were shown in nines, Mr. W. STRUGNELL, The Gardens, Rood Ashton, came 1st with very good examples. Messrs. W. J. STOKES & SON, Trowbridge, took the 1st prize with twelve excellent Ferns. *Coleus* and *Caladiums* were also in good character.

Cut Flowers are always in fine character at Trowbridge, the display of Roses was one of the best seen for years. Mr. JOHN MATTOCK, Oxford, was 1st with twelve trebles; but with thirty-six blooms, twenty four and twelve, and twenty-four and twelve blooms of Tea-scented, Messrs. J. JEFFERIES & SON, Cirencester, were in such good form that they were placed 1st in all the foregoing classes. Messrs. J. MATTOCK and H. DREW took most of the 2nd prizes. Mr. J. MATTOCK was 1st with twelve bunches of garden Roses. Asters were very fine; they were shown in three classes viz., quilled, flat petalled, and Comet, the last especially were numerous and very fine.

Store and Greenhouse Cut Flowers were not only very good, but generally nicely staged; the 1st prize was taken by Mr. CHISLETT.

Hardy Flowers were well shown in collections of twenty-four bunches by Messrs. W. D. PORTER and STOKES & SON. Dahlias were very well represented; Messrs. CRAY & SON had the best twelve show; Mr. G. HUMPHRIES the best twelve fancies. Mr. J. WALKER was 1st with twelve bunches of singles; Messrs. CRAY & SON with twelve bunches of Pompons; and Mr. G. HUMPHRIES with twelve bunches of Cactus.

The best twelve spikes of *Gladioli* came from Mr. J. MATTOCK. Sweet Peas were numerous, and zonal *Pelargoniums* and *Carnations* were in good character.

Floral decorations were shown in several classes; charming epergnes were staged, also bouquets. Mrs. COLSTON HALE had the best dinner-table arrangement; Messrs. E. S. COLE & SONS taking the 2nd prize.

There was a good display of *Fruit*. Mr. STRUGNELL, Rood Ashton, was placed 1st with ten varieties; he had Black Hamburg and Foster's Seedling Grapes, Royal George Peaches, Stanwick Elruge Nectarine, Melons, Plums, Apricots, &c. Mr. W. OLIVER, The Gardens, Littleton Panell, was 2nd.

With six dishes, Mr. W. MITCHELL, gr. to Mr. J. W. FLEMING, Romsey, was 1st; he had Black Hamburg and Muscat of Alexandria Grapes, Peaches, Nectarines, Apricots, and Melons. Mr. STRUGNELL was 2nd.

Mr. MITCHELL was 1st with two bunches of black Grapes, showing fine Gros Maroc; and he was also 1st with white, having good Foster's Seedling; and again 1st with two bunches of black Muscats, having Madresfield Court. Mr. A. R. BAILY, Frome, was 1st with two bunches of white Muscats.

Melons, Apricots, Plums, Cherries, Peaches, and Nectarines were well shown in several classes.

Mr. T. WAIT, Bath, had the best two dishes of dessert Apples, staging Beauty of Bath and Gladstone;

Lady Sudeley and Beauty of Bath took the 2nd prize. Mr. WAIT was also 1st with two bunches of culinary Apples, having Peasgood's Nonsuch and Hants Seedling; The Queen and Peasgood's Nonsuch came 2nd. Mr. WAIT was also 1st with two dishes of Peas, having Jargonelle and Windsor.

Vegetables were well shown in several classes. Mr. CHISLETT took the 1st of Messrs. SUTTON & SONS' special prizes for six dishes. The cottagers' produce was very good. Honey was also shown.

ABERDEEN.

AUGUST 18, 19, 20.—On these dates the members of the Royal Horticultural Society of Aberdeen held one of the most successful shows yet held under their auspices, financially and otherwise. This year the entries numbered 1,700, a slight decrease as compared with those last year, which was a record one. Three large marquees and one small one were erected in the northmost portion of the Duthie Public Park, the use of which the Town Council very kindly gave free of charge. Several attractive novelties were added this year, the most interesting being a competition open to school children, for the best collection of wild flowers, garden flowers, and leaves, mounted on cards. This proved a most successful venture, and Professor Trail, Aberdeen University, who was judge, declared it creditable in every way.

Coming to the exhibition itself, it may be said generally that the quality was exceedingly fine, the cut-flower classes being the outstanding feature of the exhibition. Pot-plants were scarcely up to the standard in numbers usually seen here, but the quality was very good. Fruit formed a good exhibition, everything, in fact, being above average. Vegetables were a good average show, and fully better than last year; indeed one could not say there was a mediocre section in the lot. The judges were:—Cut flowers, Mr. Andrew Reid, Durris, and Mr. James McLeod, Aberdeen; fruit and pot-plants, Mr. J. McDonald, Montrose, and Mr. J. Forrest, Haddo House; vegetables, Mr. Ogston, Inverurie, and Mr. W. Smith, Aberdeen; children's competitions, Professor Trail, Aberdeen.

Pot Plants.—These occupied the first place in the schedule, and were excellently displayed in a large marquee. The specimens were better in quality but fewer in number than last year. For a table of Begonias, Mr. H. SKENE, gr., Garthdee, Aberdeen, was an easy 1st with good plants of fine varieties; Mr. A. GRIGOR, gr., Fairfield, making a good 2nd.

The Society's Silver Medals for the best specimen plant in flower and the best foliage plant, were worthily gained by Mr. WILLIAM SCORGIE, gr., Springhill, Aberdeen, and Mr. A. DUNCAN, gr., Albyn Place, Aberdeen, respectively, while the Medals for Ferns and Pelargoniums were awarded to Mr. A. GRIGOR, Fairfield. For Pelargoniums, which were an excellent display, Mr. GRIGOR again came to the front, as also for Fuchsias, which included some exquisite specimens.

Plants for Table Decoration formed a feature, the Medal being most deservedly won by Mr. A. DUNCAN, gr. to Mr. ADAM MAITLAND, Albyn Place, Aberdeen.

Single Begonias were specially good, and Mr. James Jamieson, gr. to Mr. JOHN RUST, Hawhill, Aberdeen, secured 1st place. The classes filled by Dracænas, Gloxinias, and Petunias, were all well represented.

Cut Flowers.—Cut flowers formed a grand show. There could not have been a better season for them, and the results in rich and varied colouring were charming. The 1st prize for 24 Rose blooms—a beautiful Silver Cup—was gained by Mr. JAMES ANDERSON, Mealmarket Street, Aberdeen; while the Society's Silver Medal for twelve Rose blooms was worthily taken by Mr. GEORGE MACLENNAN, gr., Fetteresso Castle, Kincardineshire.

In Dahlias the chief honours were divided by Mr. A. GRIGOR, Fairfield; Mr. GEORGE MACLENNAN, Fetteresso Castle; and Mr. JAMES JAMIESON, Hawhill.

In the class for spikes of Gladioli, eight varieties, the Medal went to Mr. PETER TAYLOR, Constitution Street, Aberdeen.

The premier honours for Marigolds were taken by Mr. JOHN GRIEVE, Woodside, Aberdeen, with an excellent entry. Herbaceous and annual plants were a good display, as were also the collections of cut flowers. For herbaceous plants, Mr. JOHN YULE, gr., Fae-me-Well, Aberdeenshire, and Mr. A. DOUGLAS, gr., Kepplestone, Aberdeen, secured the leading places; and the latter exhibitor was the winner for the best collection, closely followed by Mr. A. GRIGOR, and Mr. WILLIAM SCORGIE, Springhill.

Pelargoniums were a magnificent show, and in these classes Mr. A. GRIGOR again distinguished himself.

The display of Orchids was very good, premier place once more going to Mr. GRIGOR; as was also the case in the classes for greenhouse plants.

Pansies have been seen here in greater numbers, but certainly not much better in quality. Mr. JAMES ANDERSON, Aberdeen, took the chief places with excellent entries.

Stocks, although somewhat affected by the rains which prevailed during the opening weeks of August,

were a very good show, and in these classes Mr. WILLIAM SCORGIE, Springhill, proved the best man.

Sweet Peas were uncommonly fine, the display by Mr. A. GRIGOR earning chief honours.

The sprays, bouquets, &c., were well shown, the chief prize-takers being Mr. STRACHAN, Botanic Gardens, Old Aberdeen; Mr. A. GRIGOR, and Mr. A. DOUGLAS, Kepplestone.

Fruit.—Here there was a specially good show, the chief features being the green Gooseberries, Strawberries, Black Currants, and collections of fruit. For the best collection of fruit, nine dishes distinct varieties, Mr. A. HOWIE, gr., Drumtochty, Forloun, came 1st with a fine entry. For hardy fruit Mr. HOWIE again took premier honours.

Vegetables.—The classes here were very worthily filled, and above the standard of the last few years. The leading honours were excellently won by Messrs. FRANK KINNAIRD, Broomhill, Aberdeen.

Nurserymen and Florists.—The show made by these gentlemen was one of the outstanding features of the exhibition. Bouquets and wreaths were an exhibition in themselves. For twelve varieties of Cactus Dahlias Mr. W. A. DUSTAN, Holburn Street, Aberdeen, secured 1st place with exceedingly fine specimens.

Messrs. KNOWLES & SONS carried everything before them in the classes for wreaths and bouquets.

Amateurs and Working Classes.—The portion devoted to these classes was meritorious in the extreme. In cut flowers the Roses were very good. Pansies were only fair, Dahlias good for the season, and annuals very fine. The fruit and vegetables in these sections also made a brave show, and reflected much credit on all concerned. Amongst the working men the competition was very keen, the quality over all being wonderfully good.

Miscellaneous.—An outstanding feature of the show which cannot be overlooked was the magnificent displays for exhibition only made by Messrs. BEN. REID & CO., Aberdeen; Messrs. JAMES COCKER & SONS, Aberdeen; Messrs. SMITH & SONS, Aberdeen; Messrs. DOBBIE & CO., Rothesay; and Mr. W. DUSTAN, Aberdeen. These were all very beautiful.

DEVON AND EXETER HORTICULTURAL.

AUGUST 19.—The 199th exhibition of the Society was held in Northernhay Park, and was one of the best held for many years, a high level of excellence being reached in nearly all the classes, while the entries were considerably in advance of last year.

FRUIT.

Fruit was much better than usual both as regards size and colour. The principal prize for a collection consisting of eight varieties was awarded to Justice SWINFEN-EADY (gr., James Lock), the sorts being Muscat of Alexandria and Alnwick Seedling Grapes, Crimson Galande Peach, Moor Park Apricot, Kirke's Plum, Lady Sudeley Apple, Rivers' Early Nectarine and Sutton's Al Melon. The collection was a strong one throughout, colour being a predominant feature. The 2nd prize went to Sir DUDLEY DUCKWORTH KING (gr., S. Baker), and this collection also was of high merit. A competitor who would have been a winner, was disqualified for having two kinds of Apples (Beauty of Bath and Irish Peach) in the same dish.

In Grapes, Mr. J. F. G. BANNATYNE (gr., J. Elliott) was 1st for Black Hamburgh; and Rev. HAMILTON GELL (gr., J. Barnes) 1st for Muscat of Alexandria, both exhibits being heavy bunches of well-coloured fruit.

For Peaches and Melons, Sir DUDLEY KING was 1st, Walburton Admirable Peach being admirable; Jargonelle Peas, Moor Park Apricots, and Elrue Nectarines were the winning kinds in these fruits; Morello Cherries, transparent white, and The Comet Red Currants were splendidly shown. In Plums, Victoria and Dennyson's Superb were first, and in Apples, Beauty of Bath and Peasgood's Nonsuch. A dish each of Japanese Wineberry, the Loganberry, and Portuguese Oranges were shown.

FLOWERS.

For twelve specimen stove and greenhouse plants there was no competition, but the collection to which the 1st prize was awarded, Mr. W. BROCK's (gr., W. Rowland), was a good one, the chief plants being Ixora Dixiana, Dipladenia amabilis, and Allamanda nobilis, all well-grown and well-flowered specimens.

Mr. BROCK was also 1st for a group of plants arranged for decorative effect, for six stove and greenhouse Ferns, for six Coleus, and for six Fuchsias, as also for table decoration. Mr. W. B. HEBERDEN, C.B. (gr., E. Cole), was awarded 1st prize for Caladiums with a very nice collection of plants, although in this class there was no other competitor.

There was no special feature in the cut flowers, excepting that Sweet Peas were well shown, Mr. B. H. HILL (gr., G. Lock) being 1st. One of the best varieties was Scarlet Gem.

VEGETABLES.

There was, as is usual in these classes, keen competition and a large number of entries. For the principal prize, the collection of twelve, Sir JOHN SHELLEY (gr., R. Mairs) just managed to win, there being little to choose between him and Sir DUDLEY KING, who was 2nd. The kinds staged were very similar, and much the same as in former years.

In Onions, always a strong class at this show, these two gentlemen reversed places in the prize-list. Throughout the Onion classes Cranston's Excelsior and Ailsa Craig were the only two kinds which scored. In Carrots the New Intermediate and the Model carried all before them. The two kinds of Leeks shown in the winning exhibits were The Monarch and Dobbie's Champion—both splendidly staged. In Potatoes the majority were of the well-known sorts.

MISCELLANEOUS.

The honorary and trade exhibitors were Messrs Robert Veitch & Son, Exeter; Geo. Kerswell, St. Thomas; Curtis, Sanford & Co. (Devon Rosery Co.), Torquay; W. B. Smale & Son, Torquay; Jarman & Co., Chard; Ware's Nurseries, Feltham; G. Penwill, Totnes; W. J. Godfrey, Exmouth; Tuplin & Sons, Newton Abbot; Sanders & Biss, Horticultural Builders, Exeter; and Robert Sydenham, Birmingham.

A stand of Groff's Canadian Hybrid Gladioli, comprising blue and other unusual combinations of colour, was put up by Messrs. ROBERT VEITCH & SON, A. H., Exeter.

PRUDHOE JUBILEE EXHIBITION.

AUGUST 20.—The fiftieth annual show of the Prudhoe and West Wylam Floral and Horticultural Society was held on the above date. This being the Jubilee of the Society, special attention has been paid to the prize list. Prudhoe show has a reputation for vegetables second to none in the kingdom, and those exhibited were enormous in size. The entries in classes for greenhouse and stove plants were large, and aroused much enthusiasm amongst plant lovers. In this section Mr. T. SUFFIELD, of Darlington, made his first appearance at the show, and certainly made his presence felt. The handsome Silver Challenge Cup, Gold Medal, and £6 in cash were carried off by him. Other prominent prizetakers in this class were:—J. ELLISON and J. HARRIS, Cramlington; J. DIXON, Addison; J. JUDSON, Shotley Bridge; W. ANDERSON, Farnley Grange; L. CAMPBELL, West Wylam, &c.

A special feature of the show was an exhibition stand of Orchids in bloom sent by N. C. COOKSON, Esq., of Oakwood Hall, Wylam.

Messrs. WM. FELL & CO., Hexham, had an exhibition stand of Sweet Peas and herbaceous plants, &c.

GARDENERS' DEBATING SOCIETIES.

CROYDON AND DISTRICT HORTICULTURAL.—AUGUST 16.—This Society held its usual meeting on the above date, the subject for the evening's debate being "A Discussion on Insects Injurious and Beneficial to Gardeners." The Gooseberry caterpillar came in for lengthy discussion and one member observed how he had always succeeded in keeping this injurious insect at bay by sowing a few Broad Beans amongst the bushes. The use of gas lime dug into the soil during the winter is a splendid remedy against most of these formidable enemies, for in this way the cocoons lying dormant in the ground are destroyed. Amongst the "friends" spoken of were the lacewing fly and ichneumon flies. The meeting's vote of thanks was accorded the exhibitors of plants, also to Mr. J. Gregory, who illustrated the talk with microscopic views and a collection of moths and larvae.

TRADE MEMORANDUM.

CHINA.—At the beginning of this year a branch business of the German firm of L. Boehmer & Co., of Yokohama, was opened at Shanghai, under the management of Mr. Theodor Eckardt. As an important demand for such goods has lately arisen in China, this branch has been founded with, amongst other objects, that of acclimatising Japanese plants in China. Messrs. Boehmer have started a school of horticulture, and glasshouses with all modern improvements are in process of erection in order that Shanghai may be well supplied with the flowers it requires. Hitherto the demand has been met by the Chinese, who know little or nothing of latter-day horticulture; and the firm of L. Boehmer & Co. is the pioneer in this direction in China as it was in Japan twenty-two years ago. Already Mr. Alfred Unger has worked up a large stock of seedlings and young plants ready for exportation to China.

Obituary.

JOSEPH BURGESS.—The death of Mr. Joseph Burgess occurred at Stetchworth Park on August 7. Deceased had been head gardener at Stetchworth Park for twenty-nine years, and was regarded as one of the ablest practical horticulturists in the district, his services for judging at horticultural shows being often in request. A man of a kindly and genial temperament, he made many friends wherever he went, and his death will be much lamented at Stetchworth, where he was exceedingly popular. Deceased was a widower, his wife having died only a short time since.

THOMPSON.—On August 19, 1904, at 18, St. Mary's Road, Leamington, Rev. Edmund Thompson, late Fellow of Christ's College, Cambridge, and Rector of Clipston, Northamptonshire, from 1867 to 1883, aged eighty-seven years. Deceased was formerly an occasional contributor to the *Gardeners' Chronicle*.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending August 20, 1904.

AUGUST 14 TO AUGUST 20.	TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.			TEMPERA- TURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.			
	At 9 A.M.				At 1-foot deep.			At 2-feet deep.					At 4-feet deep.		
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	At 1-foot deep.			At 2-feet deep.					At 4-feet deep.		
	Deg.	Deg.	Deg.	Deg.	At 1-foot deep.			At 2-feet deep.					At 4-feet deep.		
MEANS	60	56	68	52	46	62	63	62	Tot 6.40			ins.	hr.	min.	
													5	59	

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 20, is furnished from the Meteorological Office:—

"The weather during this period was very unsettled over the kingdom generally, but rain was less frequent in the east and south of England than elsewhere. Thunderstorms were experienced on Sunday in many parts of Scotland, and on Wednesday over the northern half of England and at Dublin.

"The temperature was again below the mean, the deficit ranging from 1° in England, E., to 3° in England, N.W., and Ireland, N. The highest of the maxima were recorded early in the week, and ranged from 75° in the Channel Islands, and 74° in England, S. and E., to 66° in Ireland, N., and to 65° in Scotland, W. The lowest of the minima, which were registered either at the middle or end of the period, ranged from 36° in Scotland, E., and Ireland, N., to 45° in England, E., to 51° in the Channel Islands.

"The rainfall exceeded the mean in Scotland, the north of Ireland, and the western and north-eastern districts of England, but was less elsewhere. More than an inch fell at Plymouth, Leith, and at several stations in the north and east of England on Wednesday. The largest amounts were 1.3 inch at Scarborough and Spurn Head, 1.4 inch at Lincoln, and 1.9 inch at Cheadle.

"The bright sunshine was more than the mean except in England, E., and the Midland Counties. The percentage of the possible duration ranged from 66 in the Channel Islands, and 53 in England, S.W., to 37 in the Midland Counties and Ireland, N., and to 32 in Scotland, N."

THE WEATHER IN WEST HERTS.

Another cool week.—Throughout the past fortnight the days have remained more or less unseasonably cold, while only three of the nights have been at all warm for the time of year. On the two coldest nights during that period readings within 4° of the freezing-point were registered by the exposed thermometer. At 2 feet deep the ground is at the present time about 2° colder, and at 1 foot deep about 3° colder, than is seasonable. Rain fell on four days during the week, but to the total depth of only about half an inch. These light falls of rain, however, caused small quantities of rain-water to come through the bare soil percolation-gauge on all but two days. The record of bright sunshine fell short of a seasonable duration by about one and a half hour a day. Calms and light airs mostly prevailed, the average rate of movement of the

air on the calmest day being less than a mile an hour. The mean amount of moisture in the atmosphere at 3 o'clock in the afternoon was about 5 per cent. in excess of a seasonable quantity. E. M., *Berkhamsted*, August 23, 1904.

MARKETS.

COVENT GARDEN, August 24.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Euonymus, vars.,		
Arbor Vite, per			per dozen	4	0-10
doz. ...	9	0-18	Ferns in var., per		
Aspidistras, per			dozen	4	0-8
doz. ...	18	0-36	Ficus elastica, per		
Asters, doz. pots	3	0-4	dozen	9	0-24
Aucubas, per doz.	4	0-8	Fuchsias, per doz.	2	0-4
Australian Bush			Hydrangeas, doz.	12	0-18
Ferns, dozen	10	0-12	Lilium speciosum		
per box	2	6-4	rubrum, per		
Balsams, dozen	2	0-3	dozen	8	0-10
Begonias, per doz.	6	0-8	Lycopodium, per		
Campanulas	3	0-4	dozen	3	0-4
Cannas	4	0-6	Palms, variety		
Chrysanthemums,			each	3	0-20
per dozen	3	0-4	Pteris tremula, p.		
Cocos	12	0-18	dozen	4	0-8
Crotons, per doz.	12	0-24	Tropaeolum, per		
Cyperus, per doz.	3	0-4	dozen	3	0-4
Dracaenas, variety,			Verbena, per		
dozen	6	0-18	dozen	4	0-6

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, per doz.	2	0-6	Lilium lanci-		
Alströméria, doz.	3	0-4	folium	1	0-2
Bouvardias, doz.	4	0-6	Lily of the Valley	12	0-15
Carnations, Mal-			Mallow, per doz.	2	0-3
maison, 12 blms.	0	8-3	Marguerites, yel-		
doz. bunches	9	0-18	low, 12 bunches	0	9-1
Chrysanthemums,			Marguerites, white,		
dozen bunches	6	0-9	dozen bunches	2	0-4
Coreopsis, p. doz.	0	6-1	Orchids, various,		
Cornflower	0	9-1	per dozen	2	0-8
Dahlias, per doz.	3	0-6	— Cattleyas	6	0-12
Delphiniums, per			Pclargoniums,		
dozen bunches	2	0-3	zonal, dozen		
Eucharis, doz.	2	0-3	bunches	3	0-6
Ferns, Asparagus,			— white, dozen		
per bunch	0	6-1	bunches	4	0-6
French, 12 bun.	0	3-4	— double scarlet,		
— Maidenhair,			per doz. bun.	2	0-4
doz. bunches	4	0-6	Phlox	3	0-4
Gaillardias, doz.	0	9-1	Pyrethrum, per		
Gardenias, box	1	0-2	doz. bunches	2	0-3
Gypsophila, doz.			Roses, Mermet,		
bunches	2	0-4	per bunch	1	0-2
Gladiolus, white,			— white, bunch	1	0-2
doz. bunches	3	0-5	— pink, bunch	1	0-3
— various, doz.			— red, bunch	0	4-1
bunches	3	0-6	— Safran, beh.	1	0-1
red, per doz.			Scabiosa, dozen		
spikes	1	0-3	bunches	4	0-6
Golden Rod, per			Smilax, 12 bunch.	1	6-3
dozen	3	0-4	Statice, 12 bunches	3	0-6
Heather, Scotch,			Stephanotis	1	0-2
per bunch	0	6-8	Stocks, 12 bunches	2	0-4
Honesty, bunch	1	0-2	Sunflowers	2	0-4
Lavender	2	0-4	Sweet Peas, per		
Lilium auratum			dozen bunches	1	0-2
per bunch	1	6-3	Tuberose on		
— Harrisii, per			stem, bunch	0	9-1
bunch	3	0-4	— short, p. doz.	0	2-4

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe,			Mushrooms (house)		
per dozen	3	0-4	per lb.	0	9-1
Beans, dwarf, per			Onions, green,		
sieve	2	0-2	doz. bunches	2	0-2
— Scarlet Runners,			— per bag	4	0-4
per bushel	4	6-6	— per case	4	0-4
Beetroot, bushel	1	6-2	Parsley, doz. bun.	1	0-2
Cabbages, tally	1	6-2	— sieve	0	6-1
Carrots, per doz.			Peas, per bushel	4	6-7
bunches	0	9-2	Potatoes, per ton	70	0-90
— bag	3	0-4	Radishes, per		
Cauliflowers, per			dozen bunches	0	9-1
dozen	1	6-2	Salad, small, pun-		
Celery, per dozen			nets, per doz.	0	9-1
bunches	15	6-18	Shallots, sieve	3	0-4
Cress, doz. pun.	0	9-1	Spinach, p. strike	1	0-2
Cucumbers, doz.	1	6-2	Tomatoes, Chan-		
Endive, per doz.	2	0-4	nel Islands,		
Garlic, per lb.	0	2-3	— per lb.	0	2-0
Horseradish, fo-			— English, doz.	2	6-3
reign, p. bunch	1	0-1	Turnips, new, doz.	1	0-2
Leeks, 12 bunch.	1	0-1	— bag	3	0-4
Lettuces, Cabbage,			Vegetable Mar-		
per dozen	1	0-1	rows, per doz.	0	9-1
— Cos, per doz.	1	0-1	Watercress, per		
Mint, doz.	2	0-4	dozen bunches	0	3-0

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, bushel	2	0-2	Grapes, Gros Col-		
— English, sieve			mar, per lb.	0	10-1
or half bus.	1	0-3	— Alicante, per		
Bananas, bunch	6	0-10	lb.	0	8-1
— loose, dozen	1	0-1	Lemons, per case	13	0-25
Blackberries, peck	2	6-1	Melons, each	0	3-1
Cobnuts, per lb.	0	4-1	Nectarines, A, per		
Figs, per doz.	1	0-4	dozen	10	0-15
Filberts, per lb.	0	3-3	— B, per doz.	2	0-6
Grapes, Hambro'			Oranges, per case	15	0-1
A, per lb.	2	0-2	Peaches, A, per		
B, per lb.	0	6-1	doz.	8	0-12
— Gros Maroc, lb.	1	0-1	— B	2	0-7
— Muscat A, lb.	3	0-4	Pears, per sieve	1	6-3
B, per lb.	0	9-1	Pines, each	2	0-4

REMARKS.—The prices of fruit remain much the same as obtained last week. English Plums are now coming in — Prince of Wales, Victorias, &c. The large well-coloured fruit are sold at 2s., 2s. 6d., and 3s. per sieve; green ditto, 1s. 3d. to 1s. 6d. per sieve. Green Gages, 2s. 6d., 3s., and 3s. 6d. ditto; Damsons, 2s. ditto. Cape Oranges of good flavour in cases with two layers of fruit, 9s. by 10s. by 12s. 10s. per case. Corn Cobs, 1s. 6d. per dozen. Some good outdoor-gathered Mushrooms, 5d. to 8d. per lb.

POTATOES.

Various, home-grown, 70s. to 90s. per ton, *John Bath*, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

IN August there is less trade for pot plants than at any other time of the year; still there is a good supply in the market, and the trade is quite up to what could be expected. Already we have indications that the autumn is upon us, *Solanum capsicastrum* with ripe berries being seen, but they are not much in demand at present. *Chrysanthemums* too are very plentiful. The *Madame Desgranges* that have been disbudded are the best whites; the yellow variety is also good. Some of the varieties from *Madame Marie Masse* are good, but others are not decided enough in colour. The plants which have been grown in pots show a decided advantage over those taken from the ground. Some good plants of *Solanum esculentum* (the Egg-plant) are seen. It is a little remarkable that we rarely see any of the *Capsicums* in the market, which are both useful and ornamental. Some fine plants of both red and yellow varieties in a private garden seen lately were certainly very attractive, and I believe they would sell well in our market. Asters in pots are very abundant. *Lilium lancifolium* album and roseum are good, also *longiflorum*, but the latter are not quite so plentiful as a few weeks ago. *Hydrangea paniculata* is still good; *Hortensia* is now almost over. *Fuchsias* still hold out, and one stand filled with *Verbena Miss Willmott* has a very bright appearance. Foliage plants of all kinds are more plentiful. In Ferns small plants are very good, among them *Adiantum tinetum*, *Asplenium nidus*, *A. Hilli*, *A. bifforme*, *Pteris tremula*, *P. Wimsetti*, *Adiantum cuneatum*, also many of the choicer sorts in larger plants. The *Nephrolepis* include *exaltata*, *ensifolia*, *Zollingeriana*, *cordata*, also *Duffi*, but the latter can hardly be considered a good market Fern. *Polypodium aureum* is very good, also *Asplenium bifforme*. *Adiantum cuneatum* has not been over plentiful, but just now some very good plants in 4s. are seen. *Pteris Wimsetti*, *P. erecta* major, and *P. tremula* are good. Those persons who have the convenience to keep them, can buy Ferns to advantage now. Palms are also more plentiful. Small *Keutias* are offered very cheaply. *Aralia Sieboldi* and *Ficus elastica* in short, well furnished plants. *Asparagus Sprengeri* in various sizes, *Eulalia japonica variegata*, in useful plants for autumn work, and green *Aspidistras* are all plentiful, but well variegated plants are scarce, and none of the growers seem to have a largestock.

CUT FLOWERS.

Chrysanthemums are now a leading feature. The best blooms sell fairly well, but it is too early for really good trade. Dahlias are very plentiful in Cactus varieties, the large doubles and pompons less so. Growers who raise large quantities of decided colours do better than those marketing a great variety of mixed colours. Asters are also very abundant. The quality varies considerably. The best sell fairly well, but there must be a good many of ordinary qualities left over after market. Salesmen having French-grown Asters do not appear to be doing much trade. Lily of the Valley had been scarce, and had gone up to 21s. per dozen, but it is now more plentiful, and the price is down again. *Calliopis grandiflora* (clear yellow) is very showy, while the Iceland Poppies are still to be seen. The blue *Statice* is very plentiful; there are also some of the yellow and the white varieties. *Mignonette* is good. Roses are not quite so plentiful now, and Sweet Peas are less numerous. Tuberose still command a bad trade. *Gardenias* and *Eucharis* are fairly plentiful. *Gladiolus "The Bride"* is small, but very plentiful. *Brenchleyensis* is good, and sells fairly well. *Smilax*, *Asparagus*, and cut Fern are very plentiful; there is also other good foliage. Small branches of Oak with bronzy-red tinted leaves are very pretty. There is also other good hard foliage present. *A. H.*, *Covent Garden*, August 20.

FRUITS AND VEGETABLES.

GLASGOW, August 24.—The following are the averages of the prices during the past week:—Apples, American, 12s. to 16s. per barrel; English do., 8s. to 12s. per cwt.; Dutch Apples, 11s. per barrel; Dutch Pears, 2s. 6d. per sieve; Bananas, 5s. 6d. to 11s. per bunch; Lemons, 3s. to 10s. per case; Grapes, English, 9d. to 1s. 9d. per lb.; do., Almeria, 11s. to 17s. per barrel; Melons, 24s. 5s. 6d. to 6s. 6d. per case; do., 36s. 6s. 6d. to 7s. 6d. do.; Green-gages, 4s. to 6s. per half-sieve; Plums, 4s. to 6s. do.; do., common, 1s. 6d. to 2s. 6d. do.; Currants, black, 4d. and 6d. per lb.; do., red, 3d. to 4d. do.; Tomatoes, English, 3d. to 5d. per lb.; do., Scotch, 3d. to 5d. do.; Mushrooms, 10d. to 1s. 2d. per lb.; Shallots, 8s. per bag.

LIVERPOOL, August 21.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Potatoes, per cwt., Early Regents, 2s. 10d. to 3s. 3d.; Kidneys, 3s. 9d. to 4s. 6d.; British Queen, 3s. to 3s. 6d.; Conquest, 2s. 10d. to 3s. 3d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 2s. 6d. to 3s. 3d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Parsley, 6d. to 8d. do.; Onions, foreign, 3s. 6d. per bag; Lettuces, 4d. to 8d. per dozen; Cucumbers, 1s. 6d. to 2s. 6d. do.; Cauliflowers, 10d. to 1s. 9d. do.; Cabbages, 6d. to 9d. do.; Celery, 1s. 6d. to 2s. 3d.; Peas, 6s. to 7s. per hamper; Beans, 2s. 6d. to 3s. do.; Kidneys, 9d. to 10d. per peck; do., Scarlet-Runners, 9d. to 1s. do. Fruit: Oranges, Naples, 9s. to 12s. 6d. per box; do., Valencia, 16s. to 23s. 6d. per case; do., green and pale fruit, 6s. 6d. to 13s. 6d. do.; Grapes, Almerias, 4s. to 6s. per barrel; superior do., 7s. to 9s. 6d. do.; do., Lisbon, 6s. 6d. to 7s. 6d. do.; Apples, Lisbon, 4s. 6d. to 7s. per box; do., Oporto, 4s. to 5s. 6d. per case; Melons, Valencia, 5s. to 5s. 6d. for 24s. and 6s. 9d. to 7s. 6d. for 36s.; Lemons, Naples, 4s. 6d. to 7s. for small boxes, and 8s. to 14s. for larger descriptions; do., Palermos, 2s. 9d. to 5s. 3d. per case; superior, 6s. to 8s. do.; Tomatoes, Lisbon, 5s. to 7s. per box. *St. Johns*.—Potatoes, 10d. to 1s. 2d. per peck; Peas, 10d. to 1s. do.; Cucumbers, 3d. and 6d. each; Filberts, 8d. per lb.; Apricots, 1s. per dozen; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 10d. do.; Pine-apples, foreign, 3s. to 5s. each; Mushrooms, 8d. to 1s. per lb. *Birkenhead*.—Potatoes, 8d. to 1s. per peck; Cucumbers, 2d. and 3d. each; Filberts, 8d. per lb.; Peas, 8d. to 1s. 2d. per peck; Grapes, English, 3d. to 2s. per lb.; do., foreign, 4d. to 6d. do.; Mushrooms, 10d. to 1s. 4d. do.

ANSWERS TO CORRESPONDENTS.

ACALYPHA: Lancashire. Certainly the Acalypha is a flowering plant, and quite in order in a class for stove or greenhouse plants in bloom. The objectors have forgotten their botany.

BEGONIAS: T. D. M. Your plants are affected with mites. Wash the plants with tobacco water and cultivate them with more care.

CARNATION: W. S. It is certainly unusual to see five flowers from one stem. Form and colour are good.

CATERPILLAR: J. G. The caterpillar is that of the Privet-moth, *Sphinx ligustri*.

EAST GRIQUALAND: S. F. & Co. Practically all our own vegetables, flowers and bulbs will succeed in this colony in their season, provided the necessary amount of water be obtainable.

FUNGUS ON FERN-ROOTS: Ophir, Bradford. No fungi found either with lens or microscope about the roots. You should have sent fungus from the wood of the stage. If wood is decaying, it is perhaps some form of dry rot. There is no "spawn" or mycelium in the soil about the roots sent. The fungus theory must be a hallucination. M. C. C.

GARDENER AS A DOMESTIC SERVANT: J. M. We are not lawyers, and gave our opinion from our experience of the general custom. A "domestic" and a "menial" are, we believe, synonymous, and strictly entitled to a "month's wages or a month's warning." A head gardener is a "domestic servant." But in some circumstances the hiring is for a year, and then a longer notice is required. Follow your lawyer's advice.

GLADIOLUS, & C.: H. B. Gladioli are increased from the young corms which are produced on the old corms at the end of the season's growth. The flower spike should not be allowed to develop, but all the energies of the plant directed to root development. All varieties are increased in this manner. "Heal All" is applied to both *Colilinsonia canadensis* and *Rhodolia rosea* respectively. *Prunella vulgaris* of the meadows is the "Self-heal"; "Cutleaf" is *Valeriana pyrenica*.

GRAPES: Mackereth. Your Grapes are rusted from injury during thinning. The leaves sent are covered with red-spider and thrips.—A. G. The berries were reduced to pulp when we received them. Perhaps Alicante.

JUDGING: Moorpark. If the word "hardy" was not prefixed to "herbaceous," the competitor should not have been disqualified for including Cannas, Lilies, and Tuberoses. If the framers of the schedule wished to exclude these plants, they should have said so. On the contrary, they expressly permitted bulbs and tubers.

LAWN SAND: M. T. Lawn sand will be found sufficient for the purpose without the addition of any sulphate of ammonia. Be prepared for a temporary brown appearance of the grass after using the sand.

MARKET GARDEN LAND: W. C. The rent of market garden land varies according to the locality. Enquire locally from the agents.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—S. C. 1, Duchess of Oldenburgh; 2, not recognised, send again October or later.—J. S. Juneating.—T. H. Mr. Gladstone.—Constant Reader. Apples: 1, Withington Fillbasket; 2, Cox's Orange Pippin; 3, Wyken Pippin. Pears: 1, Bellissime d'Hiver; 2 and 3, not fully developed—send when in season or fully grown.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—W. T. *Aster macrophyllus*.—W. J. G. *Asparagus racemosus* var. *tetragona*.—A. L. H. 1, *Abelia chinensis*; 2, *Aster macrophyllus*; 3, *Syringa persica* var. *laciniata*.—J. L. G. 1, *Veronica cupressoides* var. *salicornoides*; 3, *V. cupressoides*; 6, *V. carnosula*.—F. C. 1, *Mimulus cardinalis*; 2, *Geranium striatum*.—T. B. 1, *Tecoma jasminoides*; 2, a *Bromeliad*, but of which species cannot be determined without flowers; 3, *Adiantum concinnum latum*; 4, *Adiantum cuneatum* variety; 5, *Dictyogramma japonica*; 6, *Blechnum occidentale*.—J. S. You send more than six; in compensation you should send a small donation to the Gardeners' Orphan Fund. 1, *Spiraea Douglasi*; 2, *Lythrum virgatum*; 3, *Veronica salicifolia*; 4, *Veronica Hendersoni*; 5, *Veronica*, not recognised; 6, *Veronica Hendersoni* var.; 7, *Veronica Hendersoni* variegata; 8, *Scrophularia nodosa* variegata; 9, *Epilobium hirsutum*; 10, 11, labels detached, one is *Saponaria officinalis*, the other is *Veronica Traversi*.—L. H. G. *Elymus arenarius*.—R. W. 1, *Cereus* species; 2, *Mesembryanthemum eordifolium* variegatum; 3, *Nepeta Glechoma* variegata; 4, *Tradescantia zebrina*; 5, *Begonia corallina*; 6, *Anthericum lineare* variegatum; 7, *Rosa rugosa*.—C. M. B. 1, *Ligustrum lucidum*; 2, *Pulmonaria officinalis*, leaf only; 3, *Ceanothus azureus*; 4, *C. Gloire de Versailles*; 5, *Bignonia radicans*; 6, *Abelia rupestris*.—P. J. W. 1, *Adiantum hispidulum*; 2, *Doodia candata*.—A. B. E. *Salvia Horminum*.—A. W. *Solanum jasminoides*, an evergreen. *Japonica*, Durham. 1, *Ruellia Portella*; 2, specimen insufficient; 3, *Campylobotrys regalis*, so far as we can judge by leaf only; 4, send better specimen; 5, *Stenotaphrum variegatum*; 6, *Dendrobium macrostachyum*.—B. C. 1, 2, 3, 4, all garden Philoxera. Send to some cultivator; 5, *Montbretia Pottii*; 6, not found; 7, *Helianthus decapetalus* (?); 8, *Rudbeckia speciosa*.—R. A. F. 1, *Masdevallia tridactylites*; 2, *Bulbophyllum triste*; 3, *Restrepia maculata*; 4, *Oncidium* (*Palumbina*) *candidum*; 5, *Pteris longifolia*; 6, *Dendrobium Macraei*.—E. A. T. The *Oncidium* closely resembles *O. x Mantinii*.—G. E. *Clerodendron Bungei*.

NECTARINES: J. W. P. Both fruits partially decayed, but the stones sound. No trace of

fungoid disease, any mouldy appearance probably following, and not causing decay. The isolated fruits give no clue to the disease. Probably faulty treatment, as the trees and foliage are sound. M. C. C.

PEONY ROSE: B. M. H., Joppa. The fruit is that of *Podophyllum Emodi*, a native of India. The plant thrives in moist, marshy peat borders in a shady situation. Propagated by division and by seed.

PEACH-STONES: S. P. Due to an excess of water at the root.

PLANT FROM SOUTH AFRICA: S. A. We do not recognise the plant, the leaves of which are attacked by greenfly and other insects, to the puncture of which the appearances are due.

PLUM: T. W. O. We will endeavour to find out what the grub is that is causing your fruits to gum.

SAP: Moor Park. This is a very vague and inaccurate term. Watery fluid is absorbed by osmosis through the roots, is forced up the stem, being aided by transpiration from the leaves. Leaf action is dependent on heat, sunlight, and a supply of water from the root. By the inter-action of these agencies food is formed in the leaves, and when rendered soluble by the action of certain ferments, is then in a condition to be transmitted in any direction to any part of the plant where it is required for the requirements of growth and development. Exactly what are the causes which induce these movements of fluid in plants is a matter of conjecture.

SHEWESBURY SHOW: Omissions. It is impossible for us to mention all the exhibits, and we make no pretence of doing so; moreover, the conditions for note-taking were exceptionally bad. Messrs. Tom B. Dodds & Co. obtained a silver medal for table decorations and bouquets. Mr. W. A. Watts, of St. Asaph, was 1st for a collection of cut Carnations, and obtained Certificates for Chiryo (?), The Master, Pied Piper, and Mrs. Kearley respectively. Mr. Vernon was 1st in the Amateur Class. Messrs. Pope & Sons, of Birmingham, say that they obtained the 1st prize for a bouquet (Orchids excluded), besides five others prizes for flowers not mentioned in our report. The mention of sundry Orchids was therefore a mistake on our part.—Mr. H. D. Goolden writes to state that he was the exhibitor of the new double *Lobelia* mentioned, and called Mrs. Goolden. J. D. C.

TOMATOES, TO PRESERVE: Tomato. Tomatoes are often so juicy that they are difficult things to preserve. They require so much spice and vinegar that the flavour of the Tomatoes is often lost. Here is a recipe, however, which you may like to try:—Put the Tomatoes into earthen jars; place them in a slow oven, and let them bake gently until quite soft. Rub them through a fine sieve, and weigh the pulp. With every pound of pulp put an ounce of white Pepper, an ounce of salt, half an ounce of minced Shallot or Onion, and a quart of vinegar; half a small teaspoonful of mild Cayenne Pepper if liked. Boil until the mixture is as thick as cream; let it get cool, cork well, and store in a cool, dry place. Exact quantities cannot be given, as the flavour of Tomatoes, spice, and vinegar vary so much. The Tomatoes keep best when there is more pulp than juice in them.

TRENCHING: An Old Reader. The depth depends on the nature of the soil and subsoil. We cannot give you any definite advice. As a general rule, trenching to the depth of two "spits" or spades is sufficient. Get the *Calendar of Garden Operations*, post-free 7½d., from our publisher, and read p. 70.

VILMORIN MEMORIAL: The Editor acknowledges with thanks the receipt of a cheque for £5, from Messrs. Hurst & Son, Houndsditch, for the purposes of this memorial.

COMMUNICATIONS RECEIVED.—Medley Wood, Durban.—Harrison Weir.—F. W. B., St. Louis.—A. G.—Sir T. H.—Hurst & Son.—S. W. N.—R. L. C.—F. T.—Frédelle & Young.—G. C. G.—Van Tubergen, Haarlem.—Carter & Co.—Prof. Boulger.—J. M.—H. Correvon.—W. M.—G. B. M.—W. G.—C. G. van Tubergen, specimens not yet received.—W. G.—*Timber Trades Journal*.—F. M.—R. W. R.—W. B.—E. T.—Grahamstown.—G. R. S.—Boston.—M. B.—R. L. C.—B. C.—L. C.—E. J. B.—H. G. C.



LONICERA TRAGOPHYLLA; FLOWERS YELLOW; A NEW PLANT FROM CHINA.
INTRODUCED BY MESSRS. JAS. VEITCH & SONS.



THE

Gardeners' Chronicle

No. 923.—SATURDAY, Sept. 3, 1904.

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THE SEGREZ ARBORETUM.

A QUARTER of a century ago the arboretum at Segrez, in France, contained probably the most comprehensive as well as the most interesting collection of trees and shrubs on the Continent. It was planned and planted by the late Mons. Alphonse Lavallée, the proprietor of Segrez, and the author of several useful botanical works, amongst which may be mentioned *L'Arboretum Segrezianum*, an enumeration of all the ligneous plants he grew; *Clématites à Grandes Fleurs*, an illustrated work, and various essays. Unhappily, M. Lavallée died in May, 1884, at the early age of forty-nine, and since that time the plantations he made at Segrez have been allowed to run wild. But although many of the shrub collections, untended and uncared for, are now merely jungle, the place is still full of interest to anyone, like myself, specially concerned with hardy ligneous plants.

Segrez is about 30 kilometres from Paris, and is in the department of Seine-et-Oise. The mansion, which is still occupied by Madame Lavallée, is near Saint Sulpice-de-Favières, an interesting village clustered

round a fine thirteenth-century church. The park covers 30 hectares, and is not only beautiful in itself, but is beautifully set amidst surrounding hills.

The chief interest of the place as it now is lies in the trees and in such shrubs as are big enough to take care of themselves. Many of the dwarf things have succumbed to the native vegetation, or to grosser species growing near; but some of the rarer exotic trees are still probably amongst the finest of their kind in Europe. I spent a day in the latter part of July inspecting the place, and possibly a few of the notes I made then may interest some who knew the arboretum at Segrez—in reality or by repute—in early and more palmy days.

Whilst M. Lavallée kept his chief botanical collections in areas (*écoles*) specially devoted to them, he also planted interesting trees as isolated specimens in the park, after the English fashion. Some of the Conifers especially, unhampered by rivals near, are now fine, well-grown specimens. Near the entrance-gate is a large specimen of the Weeping Gleditschia, generally known as *G. Bujoti pendula*. It is probably a form of *G. triacanthos*, the "Honey Locust," but although quite hardy in England is not well known here. It is a very elegant tree, with long, slender branches clothed with Fern-like leaves. The tree at Segrez has a trunk about 1 foot in diameter, and is the largest I have seen.

Among the Conifers planted in the park and rising from the grass, I noted a fine *Picea orientalis* laden towards the top with its slender purple cones. It was 60 feet high. I do not think this Spruce is planted so abundantly as it deserves to be in the British Isles. It is decidedly one of the most elegant of the Piceas, and thrives better on poor dry soils than the common Spruce. A beautifully-grown example of *Abies brachyphylla*, 40 feet high, was also laden towards the summit with its handsome violet-purple cones. *Abies cephalonica*, so easily recognised among the Firs by its pungent leaves set all round the branch, was 58 feet high, and this, too, was bearing a full crop of its rich-brown cones. *Tsuga Sieboldii* thrives well, and cones freely. *Pinus koraiensis*, which is not frequently seen in Britain, especially grown to any size, is represented at Segrez by a tree 30 feet high, with a trunk 2 feet 6 inches in girth. A very striking variety of the common Silver Fir is *Abies pectinata* var. *pyramidalis*. I think this tree, which has quite the habit of a Lombardy Poplar and is 30 feet high at Segrez, is very rare in this country. In localities where the Silver Fir thrives, it would make an interesting addition to fastigate evergreen trees of the Irish Yew stamp. At present there is not a great variety of them.

There are comparatively few trees and shrubs that flower towards the end of July, in France just as in England. My interest therefore was excited by the sight of a tree near the château covered with yellow flowers. It proved to be *Kolreuteria paniculata* (*Gardeners' Chronicle*, 1887, ii. fig. 3), a beautiful object as seen here. In Britain this tree is quite hardy, and flowers occasionally during August, but it evidently requires the brighter sunlight of the South to develop its beauties to the full.

Euptelea polyandra is a tree of great interest botanically. It is a native of Japan

and the genus to which it belongs used to be placed amongst the Magnoliaceae. It has lately been transferred to a new Natural Order—Trochodendraceae—along with *Trochodendron*, *Cercidiphyllum*, *Eucommia*, and other genera. At Segrez it is 15 feet high, and has flowered during the summer; in July it was carrying plenty of its small flat fruits.

A good deal of attention has in late years been given to the magnificent long-leaved Walnuts of Japan—*Juglans cordiformis* and *J. Sicboldiana*. They are nearly related, and both are remarkable for the size of their leaves, especially when young. At Kew, I have measured leaves of *J. cordiformis* 3 feet 6 inches in length. Only small trees exist in Great Britain, so far as I know, but at Segrez there is perhaps the finest specimen in Europe. The trunk is 3 feet 3 inches in girth, and it supports a spreading head of branches 40 feet in diameter. As usually happens with big-leaved trees, the foliage is much smaller in adult trees. This species is figured in the supplement to the *Gardeners' Chronicle* for October 19, 1901.

The collection of Oaks is fairly extensive, but the trees are only moderately well-grown. I was interested to see a specimen of the true Valonia Oak (*Quercus Ægilops*), whose large acorn-cups are so remarkable. I do not know that they are produced in Britain, but the tree, although difficult to get true to name, is hardy in the South of England. There was also a good specimen of its variety *Pyrami* (the *Quercus Pyrami* of Kotschy). This is a dwarf sturdy tree, with a striking rough bark and very characteristic habit. It is represented at Kew by a healthy tree 12 feet high.

Of the interesting genus *Pterocarya*, three species are at present in cultivation. They are *P. caucasica*, *stenoptera*, and *rhoifolia*, and all three are in good condition at Segrez. *P. stenoptera* I had not seen in fruit before, but it was bearing an abundant crop here. It is, of course, easily distinguished from the other two by its winged midrib, but the wings on the nuts are also distinct in being longer and scimitar-shaped. In England *P. caucasica* is represented by very good specimens—notably in the Cambridge Botanic Garden and at Claremont. There is also a nice tree at Syon House. Mons. Lavallée divided *P. caucasica* into three species, relying on the size of the nuts, the different shape of the wings, and the shape of the leaflets, to differentiate them. The differences between what he termed *P. Spachiana* and *P. fraxinifolia* were easily discernible in the trees at Segrez, both being in fruit, but botanists have not followed him. Probably the two are united by intermediate forms. A third and dwarfer form he named *P. dumosa*.

Rhus vernicifera, the Lacquer-tree of Japan, is represented at Segrez by a magnificent specimen 40 feet high. This tree is proving hardy in England, but I do not know of a tree half so large as the one at Segrez. *Carpinus japonica* is one of the Hornbeams, which some botanists place in a separate genus called *Distegocarpus*. It was abundantly in fruit. *Cladrastis amurensis*, an uncommon tree in Britain, is here 20 feet high.

For some years past Continental nurserymen have offered in their catalogues *Sophora Korolkowi*, of Cornu, with the information that

it was a native of Central Asia (Turkestan). Little has been known of it in this country, however, and I was particularly interested to see a fine tree of it at Segrez 30 feet high, with a large rounded head like that of *S. japonica*. The trunk was 1 foot in diameter. Although the tree was showing a good deal of flower, none as yet were open, but I was told they were violet-coloured. The leaflets are larger and longer than those of *S. japonica*. The species, flowering as it does in August, is evidently worth the notice of tree-lovers in this country. There are small trees at Kew, but probably some years from the flowering stage.

There are, of course, many more trees worthy of note at Segrez—many indeed one would be apt to pass by in a hurried visit unless they were pointed out. In places they are very crowded, and but few labels are left to help one. There is a comprehensive collection of Hickories for instance, specimens of such fine species as *Carya sulcata* and *C. tomentosa* being of good size but wanting room to develop. Segrez, even now, is intensely interesting, but twenty years' neglect has made the interest often a melancholy one. *W. J. B.*

NEW OR NOTEWORTHY PLANTS.

CRASSULA "JUSTUS CORDEROY," N. HYB.

HITHERTO very few hybrids of the genus *Crassula* have been raised, and none of a more interesting character than the one here dedicated to Mr. Justus Corderoy, of Blewbury, Didcot, by whom it was raised, and who is a great lover and very successful cultivator of all succulent plants.

The female parent is *C. Cooperi*, a very dwarf tufted species with crowded narrow leaves not more than $\frac{1}{2}$ inch long, green or reddish, marked with impressed dull red or dark green spots, and ciliate on the margin, but without papillae on the surface; the flowers are white, in small compact cymes. The male parent is *C. falcata*, a tall species with large falcate-oblong leaves, whose whitish surface is formed of peculiar, closely contiguous papillae; the flowers are red, in large cymes.

The hybrid result is a small plant about 6 inches high when in flower, with a moderately stout, erect, red stem, covered with short spreading hairs on the leafy part, and with whitish papillae on the flowering stems. Leaves opposite, crowded or separated here and there by an elongated internode, widely spreading, $1\frac{1}{2}$ — $2\frac{1}{4}$ inches long, 5—7 lines broad and 2—3 lines thick, lanceolate, acute, flat or slightly concave above, very convex beneath, thickly sprinkled with small globose, whitish papillae on a green ground, producing a greyish-green colour, marked on both sides with darker, slightly impressed spots. Flowering branches red, with a few pairs of distant, reduced leaf-like bracts. Cymes somewhat lax, $1\frac{1}{2}$ — $2\frac{1}{2}$ inches in diameter, many-flowered. Pedicels $\frac{1}{8}$ — $\frac{1}{4}$ inch long. Sepals about 1 line long, $\frac{3}{4}$ — $\frac{1}{2}$ line broad, ovate, acute, ciliate, and with a few spreading hairs on the back. Corolla about $2\frac{1}{2}$ lines in diameter, glabrous, pinkish, with lanceolate acute, spreading petals. Anthers greenish-black, pollen yellow. Filaments and carpels light carmine.

The impressed spots on the leaves of the female parent are preserved in the hybrid, but the cilia are absent, whilst the thickly-scattered (not contiguous) papillae on the leaves represent the large contiguous papillae which form the leaf-surface of the male parent. *N. E. Brown.*

IRIS SOFARANA VAR. MAGNIFICA, SIEHE.

THE original stock of this beautiful Iris grew abundantly near the station Ain Sofra, on the main line between Damascus and Beirut. Unprincipled collectors, however, have rooted up all the stock, a fate which will befall nearly all the beautiful *Oncocyclus* Irises in Palestine, if the dealers there do not arrange for a reasonable plan of cultivation of these plants. The fine Iris *Lortetii*, discovered by Barbey, is already growing freely, thanks to judicious culture.

Iris *Sofarana*, of Foster, was first collected by

group successfully; but they will have no failures to fear if, as with other plants, Orchids for example, they carefully study their natural habit. In the English climate this plant can best be grown in large pots with good drainage, in which it can be kept perfectly dry during the summer. *W. Siehe, Mersina, Turkey-in-Asia.*

KEW NOTES.

DERRIS FORDII, Oliver.—This is a new and good garden plant belonging to the order Leguminosae, and has borne a profusion of flower in the Pa'm-



FIG. 64.—IRIS SOFARANA, FOSTER, VAR. MAGNIFICA. (Natural size.)

Mr. Hartmann, and with him I made an excursion some time ago to the higher Lebanon to collect other varieties discovered by him which grew at an altitude of about 6,500 feet. I have placed this fine plant in the market under the name of *Iris Sofarana magnifica*. Both habit and colour are striking—silvery-white with purplish-red markings, which almost overpower the tint of the background.

The plant grows readily in limestone soil where, in summer, there is absolute freedom from moisture. This condition must be duly noted by those who wish to cultivate any Irises of the *Oncocyclus*

house at Kew. It was received from the Hong Kong Botanic Garden in 1900, the plant being then a very small one, contained in a Wardian case amongst various other plants; it has now twining woody stems some 18 feet long, which are trained up the roof. The leaves are alternate and impari-pinnate, having usually five ovate leaflets, varying from 2 to 5 inches in length; the inflorescences are produced both on the old and new growths; the papilionaceous flowers are borne on a loose raceme, which is from 9 to 15 inches in length, the inflorescence very much resembling that of a *Lonchocarpus*. The flowers.

are white and sweetly-scented, rather less than $\frac{1}{2}$ -inch in length. The slender pedicel and the calyx are brown-red in colour, making a pretty contrast with the white corolla. It is a native of the province of Kwangtung, China, and is figured in *Icones Plantarum*, t. 1771. A plate is also being prepared for the *Botanical Magazine*. The genus

ANGRÆCUM EICHLERIANUM, *Krincin*.

This fine Tropical West African species has just flowered freely in the warm Orchid-house. The plant is a large specimen with seven growths, some of which are 3 feet in length; the leaves are leathery, each measuring about 5 inches in length and 2 inches in breadth. The plant is

at the Royal Horticultural Society's meeting on August 9. The plant is figured in the *Botanical Magazine*, t. 7813.

ROMNEYA TRICHOCLALYX.

This new species has been in flower for the past two months in a recess outside the Palm-house. It is the first time it has flowered at Kew, and the early date of its flowering is due to the protection afforded by its sheltered position. In addition to this an old light was placed over it during the winter. The seeds were sent to Kew by Miss A. Eastwood, Academy of Science, San Francisco, in November, 1902. They were sown at once, and the young plants, after being wintered in a cold frame, were planted in their present position in the spring of last year. They are now 5 feet high, and have a diameter of about 3 feet. These dimensions show that the species is a very free grower, and it is certainly very free in flowering, probably more so than the well-known *R. Coulteri*. The terminal flowers of the main branches were fully 6 inches in diameter, and white. In the *Gardeners' Chronicle* for Sept. 13, 1902, p. 191, Mr. Nicholson made the following reference to this species: "I have received from Mr. H. C. Baker, Oaklands, Almondsbury, Gloucestershire, flowers of this species, which from a garden point of view is abundantly distinct from the plant I have always seen cultivated under the name of *R. Coulteri*. It differs from *R. Coulteri* in its setose calyx, in its thinner, weaker suffruticose, easily spreading, more leafy stems, and its pinnately three to five parted leaves, which closely surround the bud." W. H.

EXPERIMENTAL CULTIVATION.

(Continued from p. 125.)

EXPERIMENTS WITH MANURES.—This division of experimental work presents a wide field for investigation, and its importance has naturally led many to engage in it. The problems are so numerous and so complex that with all that has been done (and the recorded results are now voluminous in some directions), a large proportion still awaits solution. Here, as in other departments, it is essential to start with a clearly defined scheme, and the questions to which answers are desired should be as few and direct as possible at one time. It may be wished to determine the fertility of the soil and the manures most useful to general crops, in which case several kinds of plants can be subjected to a series of simple tests. The comparison of stable or farmyard manure with artificials alone and in combination may form another course of experiments. The determination of the special requirements of particular crops will constitute a useful and interesting investigation when well planned. It is also important to ascertain in what form or from what source the essential elements of plant growth can be applied with the best economic results, both as regards cost of the manures and the amount or quality of the produce. Such distinct subjects are best studied separately, and attempts to provide for them all in one series of experiments lead to serious complications and endless difficulties in determining the results. Questions regarding the amount of manures and the time of application can however usually be dealt with in either of the series without involving much additional trouble; or if more convenient they may be treated separately in an extension of the general experiments.

To facilitate comparison between the work in different institutions and districts, it has been suggested that whatever manures may be employed the proportions of nitrogen, phosphoric acid, and potash they contain should be stated in pounds, rather than the total weight of manure only. Further, that all these essential substances should be supplied in multiples



FIG. 65.—IRIS SOFARANA VAR. MAGNIFICA GROWING IN MR. SIEHE'S NURSERY IN MERSINA. (SEE P. 162.)

Derris is one that is practically unknown in gardens, and *D. elliptica* is the only other species in cultivation at Kew. Although the plant under notice is flowering under stove conditions, it is quite possible that much cooler treatment will be found to suit it equally well. It should be grown in a rich, loamy soil, either in pots or planted in a border. Occasional thinning-out the weak growths is all the pruning it requires.

carrying twenty-five large flowers, produced singly and in pairs; the sepals and petals are greenish-yellow, about $1\frac{1}{2}$ inch in length; the lip is also about the same size in diameter, greenish in the upper part and ivory white in the broad lower part; the spur is short, dark green, and slightly inflated. It was sent to Kew from Old Calabar in 1899, and again in 1900, since which time it has flowered each year. Several small plants were exhibited by Messrs. Sander & Sons

of 5 lb. instead of in the percentages found in 1 cwt. or 2 cwt., &c. It is only by such means that the diversified work now being carried on can be rendered generally serviceable; and it is satisfactory to note that these suggestions have been officially approved, and the principle adopted in many places. How far equal amounts of an essential substance in different manures may be available to plants is one of the questions upon which experiments may throw a light, but if plants have been treated alike in at least one respect, there should be something upon which to found a reliable judgment. It is not difficult to state the amounts of manures used as well as the proportion of the essential substance; and in any case it is easy to express the quantities in definite weights of the compound manures.

As an example of the method of dealing with an enquiry concerning the manurial requirements of soils, the following scheme, as set out by the Agricultural Education Association, is instructive. The first question is, "What does the soil most require?" To this are devoted five plots—1, receiving no manure; 2, a complete artificial manure supplying nitrogen, phosphoric acid, and potash; 3, an incomplete manure, omitting the potash; 4, an incomplete manure omitting the phosphoric acid; and 5, an incomplete manure omitting the nitrogen. The last three provide two of the essential substances only in each case, and the effects on the crop produced by the omission of each or in turn must be carefully watched.

IS FARMYARD-MANURE ESSENTIAL?

The second question bearing upon the same subject is: "Must the soil have farmyard-manure?" And this is attacked by devoting two plots to the matter, one in which farmyard-manure only is employed, and another in which that is used in conjunction with the complete artificial manure of plot 2.

A third question to be answered is the following: "Is the artificial manure for plot 2 sufficient as well as complete?" And to this three plots are allotted, in one of which the nitrogen is increased by 33 per cent., in another phosphoric acid is increased in the same proportion, and in a third potash is similarly increased.

To still further exhaust the enquiry, a fourth question is proposed, namely, "Can the soil supply any two of the three constituents of a complete artificial manure?" And this is disposed of in three plots, one having nitrogen only, and the others phosphoric acid and potash respectively. Thus in one subject of a general character, thirteen plots are set out, and if these are duplicated, or the no-manure plot repeated, both of which courses are desirable in many cases, it may be necessary to have about thirty plots to ensure that the matter is disposed of in a thorough manner. But it may not be essential that the whole of the four sections be investigated at once; they can be taken in pairs or grouped according to the particular requirements of the crop, the district, or the inquirer; but in each the plots named must be undivided, though No. 1 (no manure) and No. 2 (complete artificial manure) must be repeated for comparison with the other sections.

In some soils where certain constituents are known to be deficient in quantity, such as lime, for instance, a section framed upon the same lines could be introduced, either in addition to the others or as a substitute for one of them. Again, on the question of sufficiency of manures in section 3, the 33 per cent. increase above the normal may not prove adequate as regards one or more of the substances, and extended experiments would be needed to determine how far 50 per cent., or an even greater increase, may be requisite and profitable.

No particular crop is named in connection with this scheme, because it is specially directed to

ascertaining the requirements of the soil. It might be regarded as a preliminary to the investigation of the needs of any plants, and one or several different kinds could be tried. But the plots should be so planned that they may be retained for similar experiments. The actual quantities and the proportions of each substance in the mixed manures will have to be regulated by the crops under trial, and to this reference will be made as we proceed. *R. Lewis Castle.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA × CALLISTOGLOSSA.

A FINE form of this showy hybrid between *Lælia purpurata* and *Cattleya Warscewiczii* is in bloom with Mr. H. A. Tracy, Orchid Nursery, Twickenham. The sepals and petals are white delicately veined with rose, and the large labellum ruby-crimson. Of the many hybrids which have bloomed in his nursery this year, Mr. Tracy considers the forms of *L.-C. callistoglossa* the most satisfactory, as they have bloomed more or less for the past four months; and although all have been beautiful, no two have been alike, except in the case of some large specimens which he had divided. Among those which have flowered, some have pure white petals and sepals and carmine-crimson lip, while others had rose-coloured sepals and petals with maroon-purple labellums. The variety *excelsa*, raised at St. Albans, was one of the best.

Since the original flowered with the raisers, Messrs. Jas. Veitch & Sons, Chelsea, described in the *Gardeners' Chronicle*, January 21, 1882, many other batches have been raised, each exhibiting variation, and probably no hybrid has retained popularity as this has done. Records of the dates of flowering also show that this hybrid may flower at any season, several of the certificated varieties having been shown in January, others in November, though summer produced most.

A circumstance may be mentioned in connection with Mr. Tracy's experience. Last year he had some large specimens of this Orchid which had degenerated in the quality of the flowers. He decided to divide them, but they were dense masses, and a large pruning-knife had to be used to separate the parts. The roughly-handled pieces were potted separately, and have given the best show of flowers this year, the blooms having returned to the original fine type.

ST. LOUIS EXHIBITION.

THE JAPANESE EXHIBITS.—The Japanese site is situated a little to the south-east of the French section, on a hill overlooking the machinery hall, and perhaps no greater change could be imagined than that experienced by the visitor in stepping from the French garden, with its broad straight avenues, or from the old English garden where strict formality is the rule, to that of Japan, in which an air of studied irregularity and rusticity reigns everywhere. A winding gravel walk leads from the main entrance at the north-west corner of the garden to the main pavilion, and around the brow of the hill, where an extremely pretty picture presents itself to the view, a lake, fed at one end by a miniature waterfall, has been excavated in the side of the hill. The banks have been built up with natural rock, old wooden piles, &c., and suitably planted with trees and shrubs to accentuate the irregular form of the lake. At different points in the water are planted Japanese Iris, which gave a magnificent display of bloom in June. On an island in the centre of the lake is an artificially dwarfed but perfectly healthy plant of *Acer palmatum dissectum*. It is about 6 feet high, and about 250 years old.

Scattered about in various parts of the garden is an interesting collection of Japanese Conifers, including several dwarf plants of *Chamaecyparis obtusa*, ranging from 80 to 350 years old. The gnarled stems and quaint forms of these greatly excite the curiosity of the visitors. There are also plants showing it in its natural form.

The Umbrella Pine, *Sciadopitys verticillata*, and the Chinese Yew-tree, *Podocarpus chinensis*, are used with good effect in groups at prominent points, as is also *Juniperus procumbens* amongst the rocks on the hillsides. The lawns are furnished with good specimens of *Pinus densiflora*, *P. parviflora*, *Chamaecyparis filifera*, and *Juniperus chinensis*, planted singly. A group of *Cycas revoluta* with 4 feet stems is a prominent feature at the top of the hill. Mention must also be made of the bush plants of *Wistaria chinensis*, which produced a mass of bloom in May. Some interesting details of the cultivation of these are given by Mr. Yukio Itchikawa, superintendent of the garden. Like the dwarfed Conifers, these *Wistarias* undergo a course of "stunting," but whereas with the Conifers the process commences when the plants are quite young, the *Wistarias* are allowed to grow naturally for seven or eight years before anything is done. They are then taken up, cut back to the required dimensions, and root-pruned, after which they are replanted in the open ground for two years to recover. At the end of two years they are again lifted and root-pruned and put into pots just large enough to receive the balls. Plants treated in this manner produce much shorter growths and more flowers. The characteristic appearance of the Japanese garden is kept up by lanterns scattered amongst the trees, some of them 5 or 6 feet high, and richly worked in bronze life-sized figures of deer, storks, &c., also adorn the garden. Amongst the flowering plants a large bed of *Lilium speciosum albidiflorum* is very conspicuous. Although there are six pavilions on the ground, all are so well disposed and screened with heavy foliage plants that there is no appearance of crowding whatever. The garden was designed by Mr. H. Foukoubu, Director of the Imperial Japanese Gardens at Tokio, and the work has been carried out by Mr. Y. Itchikawa, who also had charge of the Japanese display at the Paris Exposition of 1900. *T. W. Brown, St. Louis.*

CULTURAL MEMORANDA.

PEACH AND NECTARINE TREES.

SHOULD the trees be making any very strong growths, these should be cut out when summer pruning is done, as the flowers from such wood seldom set well, and the shoots are liable to "gumming" or to "bark-binding." If the trees are growing too strongly throughout, the roots should be pruned about a fortnight or three weeks after the trees have completed their growth, which will allow the buds time to develop. Take out a trench 2 feet deep and 2½ feet from the trunk of the tree; then carefully work all the soil into the trench with a hand-fork and a large wooden plant-label, keeping it well away from the bottom. Take great care not to break or injure the fibrous roots, but tie them back to the trunk with raffia as they become free. When the soil has all been removed, then with a sharp knife prune the large rough-looking roots hard back to the stock, as they would undoubtedly throw suckers sooner or later. There is generally a "tap-root" (which is one that grows directly down into the ground) when growth has been very strong. This should be severed. Cut off any roots that may have been injured whilst removing the soil, as roots so injured would produce suckers. When this has been done, fill up with the old soil to the required depth for the reception of the

tree, tread it firm and apply a thin layer of loam, then place the tree in position, lay the roots out quite straight in layers, covering each layer with a mixture of loam and mortar-rubble containing a 5-inch potful of Clay's Fertiliser to each barrowful. Then continue to fill up with the old soil, or loam if it is plentiful, still adding mortar-rubble liberally. Tread the ground a little when the work has been finished, and apply a little water but not sufficient to saturate the soil. Tie the main branches up loosely, allowing room for the trees to settle. Afford shade on bright days, and syringe the trees frequently; they will thus retain their foliage longer, and consequently make fresh fibrous roots. If trees are treated in this way a moderate crop of fruit may be expected from them next season. Should the soil at the bottom of the border be wet and waterlogged, proper drainage should be provided at once, as this is very essential. *F. G. Brewer, 11, Ray Lodge Road, Woodford Green, N.E.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS AT THE END OF JULY.

(See Tables and General Summary, ante, pp. 70-76.)

(Continued from p. 146.)

KENT (continued).—Strawberries have yielded a heavy crop of fruits of fine quality. Gooseberries are especially fine, but Black Currants are more or less a failure, chiefly owing to the mite. Aphis this year is very prevalent, and is not easily destroyed. Apples and Pears are both very promising, the leafage being extra luxuriant, some recompense for the wet season last year. All vegetable crops look very promising in this neighbourhood. Potatoes all round look very healthy, but spraying has been commenced as a precaution against disease. Soil varies from gravelly to good deep loam. *W. E. Humphreys, Blendon Hall, Bexley*

MIDDLESEX.—The season opened with every prospect of splendid fruit crops, and a few varieties of early Apples and Pears have set well, but mid-season and later kinds are very poor. Plums are a total failure in the open, trees on sheltered walls only having a crop. All kinds of Cherries, since the fruits formed, dropped wholesale. Apricots, though a good set, also failed. Both Peaches and Nectarines are fine. Strawberries are both good and abundant. Raspberries, though plentiful, are smaller than usual. Other small fruits are good. Our soil is very light, resting on gravel—by no means a good fruit soil. *Geo. Wythes, Syon House Gardens, Brentford.*

— Apple-trees of all varieties are bearing very heavy crops of fruit. Soft fruits have been good—Strawberries excellent. Pears bloomed well, but the fruits of several varieties dropped early, so that the crop left to mature is somewhat thin. Plums are very good. On the whole, 1901 may be said to be a very good all-round fruit year. The soil at Wrotham is light, resting on a gravelly subsoil; notwithstanding, fruits do exceptionally well in most seasons. *H. Markham, Wrotham Park, Barnet.*

— The fruit crops this year are not so good as we were led to anticipate. Strawberries did well, but Cherries disappointed us greatly—so many dropped after the long continuance of easterly winds. Our soil is a light loam resting on gravel, and we succeed better in a wet season than in a dry one. *James Hudson, Gunnersbury House Gardens, Acton, W.*

— There were good prospects of fruit crops generally, with the exception of Plums, the bloom on the latter trees being scanty. Cherries bloomed and seemed to have set well, but the

continuous cold winds and frosts in May, with the accompaniment of blight, caused the fruits to drop wholesale. Black-fly is more plentiful this year than usual. Aphis almost ruined the Currants. Gooseberries and Strawberries are clean and good, also Apples, Pears, and Peaches. *W. Watson, Harefield Place Gardens, Uxbridge.*

— The fruit crops in this district are good, but the blight is doing great damage. Absence of rain is becoming serious for the later fruits. The soil is a good loam on gravel, moderately retentive. *W. Bates, Cross Deep Gardens, Twickenham.*

SURREY.—Fruit trees and bushes never promised better than did those in these gardens in the flowering season, and with the exception of some of the finer varieties of Plums these promises are so far being fulfilled. We have had to thin the crops of Apples and Pears, especially the latter, for despite the natural dropping, which was more noticeable than usual this year, the fruit was much too plentiful to permit of high-class finish being attained. *J. F. McLeod, Dover House Gardens, Roehampton.*

— The fruit crops in this neighbourhood are very satisfactory, with the exception of Plums, standard trees of which are almost a failure, although trees trained on a north wall have a satisfactory crop. The Apple crops are good, many of the trees having had to be well thinned. Strawberries were very good, "Leader" being the heaviest cropper. Cherries were also good, but required protection from birds. Gooseberries, Currants, Raspberries, and Loganberries are all good; in gardens where Raspberries fail, Loganberries should be given a trial, jam made from them being excellent, both with regard to flavour and colour. The soil here is of poor quality, well known as Bagshot Sands. *C. W. Knowles, Bagshot Park Gardens, Bagshot.*

— With the exception of Plums and Apricots, the fruit crops in this district are abundant. The east wind, which in so many districts proved fatal to the Cherry crops, was responsible for the partial failure of our Plums and Apricots. Strawberries Royal Sovereign, Trafalgar, and The Laxton have been both plentiful and fine. *W. Honess, Cobham Park Gardens, Cobham.*

— Apple-trees are carrying heavy crops, and the fruit promises to be of good quality. Pears are a medium crop. Plums are very disappointing; the trees flowered well, but there is very little fruit. Strawberries have never been better. The soil here is of the greater part sand, and almost sterile; in some parts the subsoil is purely sand, which dries quickly, and manure when used soon disappears. *E. J. Salter, Woodhatch Lodge Gardens, Reigate.*

— The nature of the soil seems to have little to do with the fruit crops, as generally it suits some kinds and is unsuitable to others. This applies to all soils alike. Our chief fruit-tree crop is the Apple, which promises to be very good. Pears, Plums, and Cherries thinned so greatly after setting that these have very poor crops as a rule, although here and there some trees are good. Bush fruits and Strawberries bore generally splendid crops. Peaches and Nectarines have fruited well, but Apricots are thin. On the whole, the fruit crops this year are fairly satisfactory. *A. Dean, 62, Richmond Road, Kingston-on-Thames.*

— Hardy fruits in general are most satisfactory this year. Apples are a heavy crop; three-fourths of the fruits required to be taken off. Pears have dropped largely, but still remain a good average crop. Plums are good, but Aphis is unusually troublesome on the trees. Cherries are first-rate in quality, although red spider is very troublesome. Peaches and Nectarines set a good crop, but the check caused by cold winds produced "blister," hence the fruit is dropping

freely. Apricots are a clean crop, but the fruits dropped freely during stoning, insufficiently ripened growth no doubt accounting for this. Small fruits are first-rate in quality, and much cleaner than last year. Strawberries were the heaviest crop in my experience and the quality perfect. Walnuts and Filberts are an abundant crop. The soil here is a light porous loam on a gravelly sub-soil. *Geo. Kent, Norbury Park Gardens, Dorking.*

— With the exception of Pears, Apricots, and Plums, all fruit crops are good. Small fruits are all fine crops; Black Currants are grand here, but caterpillars have caused great loss in many places. The birds destroy thousands of grubs and caterpillars, but in getting them they partly destroy the fruit as well. *W. C. Leach, Albury Park Gardens, Guildford.*

SUSSEX.—The wet and comparatively sunless autumn of last year caused the wood to be not quite so firm as usual, but fruit-trees of all sorts were a perfect picture when in bloom this spring. The bad set of Pears and Plums I attribute to gales of wind when the trees were in flower. We had no late spring frosts this year to damage the blossom, as a result of which the crop of Strawberries was excellent. Our soil is of a clayey nature with a subsoil of sandstone impregnated with iron. *Alex. Reid, Possingworth Gardens, Cross-in-Hand.*

— The promise in the spring for fruit of all kinds was exceptionally good, but a spell of easterly winds in May caused a large quantity of the flowers to drop, and also in some cases injured the foliage. Our soil is of a light character. *E. Burbury, Castle Gardens, Arundel.*

— Apples here are a full and good crop, the trees being very clean, owing in a measure to the rain, and their being frequently sprayed with concentrated alkali (caustic soda). Pears are a medium crop, but of good quality. Plum crops are very thin, excepting on old trees on walls. Cherries all dropped, owing, I think, to the cold rains and wind. Bush fruits are good. Black Currant-bushes have greatly improved from the mite, the attacked buds having been kept picked off, and the bushes sprayed with an alkaline solution (caustic soda). We have as the result a fair crop of fruit. Last year they were a failure; I was advised to pull out the bushes and burn them, but gave them another trial, with the above result. Strawberries are abundant and good. The soil here is very stiff, hungry, and in winter unworkable; the subsoil is stiff clay. *A. B. Wadds, Paddockhurst, Worth.*

— It was stated that the fruit crop in this country was going to be a good one this year. Some Pear-trees which showed abundant bloom have not set a single fruit. The one variety that has fruit on is Conference. This variety usually sets fairly well here; unfortunately the fruits will not keep, but soon begin to decay in the centre. Plum-trees have scarcely any fruit, nor have our Peach-trees on a south wall. Fig-trees made a show for a good crop, but they soon turned yellow, shrivelled, and dropped off, although this is supposed to be a specially good place for growing Figs. A large Williams's Bon Chrétien Pear-tree, while in full bloom one sunny day, had hundreds of bees humming about its flowers, so I thought this year I should have a fine crop, but although the quantity of bloom was phenomenal, the result is almost a total failure. Many perhaps may have anticipated a full crop from the abundance of bloom in their fruit orchards, but judging from my own trees I think the fruit crop this year is not a good one. There appears to have been something wrong with the flowers, as few were fertilised, and in cases none at all; even Apple-trees show a very poor crop. It

is not only the bloom of fruit-trees that has been strangely affected, my early-flowering Laburnums have every year been covered with seed-pods after the petals had dropped. This year, although they bloomed profusely there is scarcely a single seed-pod on them. *E. Bonavia, M.D., Westwood, Richmond Road, Worthing.*

— Apples are an abundant crop, the fruit being of good quality and free from blemish. Pears, which at one time promised favourably, are in cases disappointing; varieties on pyramids in the open, although they set well, have dropped many of their fruits, some varieties practically carrying no crop at all. On walls the crop is generally large and of good quality, notably Marie Louise, Pitmaston Duchess, Williams' Bon Chrétien, Doyenné Boussoch, Beurré Hardy, &c. The crops of Cherries are variable; trees in warm situations on walls are carrying abundant crops of fruit of good quality, while from bushes in the open in some cases the whole of the fruits have dropped. The same remarks apply to Plums. Trees on walls of Victoria, Monarch, Jefferson's, Czar, Kirk's, &c., are carrying good crops of fruit; in the open ground many are left bare. Strawberries were a fine crop, both for quality and quantity, notably Royal Sovereign, Noble, A. Nieaise, Waterloo, Latest-of-All, &c. Gooseberries and Currants were plentiful. Raspberries are a thin crop, many of the canes not breaking this season, owing to immature wood. Our soil is a heavy loam overlying stiff clay. *Charles Jones, Ote Hall Gardens, Burgess Hill.*

WILTSHIRE.—The prospects at the flowering period were excellent, and with the exception of Plums all other crops are good. Aphis and other insects that affect fruit-trees have been very destructive, and those gardeners who did not take preventive measures in time have in many instances lost nearly the whole of their crops, especially those of Cherries, Apples, Gooseberries, and Currants. The soil here is composed of chalk marl intermixed with flint. *T. Challis, Wilton House Gardens, Salisbury.*

— The fruit crops in this district are extremely good. Old Apple-trees that have carried little or nothing for the last two or three years have full crops. Pears are thin. They seemed to have set well, but since then a great many have fallen, probably owing to the dry weather. Gooseberries have suffered badly from the attacks of caterpillars. Our land around here is mostly of a medium friable loam, with either a chalky or gravelly subsoil. *S. W. Tucker, Longford Castle Gardens, Salisbury.*

7, ENGLAND, N.W.

LANCASHIRE.—We have a heavy crop of Apples and Pears, also Morello Cherries; Plum-trees flowered well, but have a very light crop. Small fruits are good. I have always contended that there is too much importance given to the necessity for the wood to be perfectly ripened. The recognised conditions were entirely absent last year, but we have now one of the best of fruit crops. The subsoil in this garden is of clay. *W. P. Roberts, Cuerdon Hall Gardens, Preston.*

— The fruit crops generally are not realising the promise there was in early spring. Green and black-fly have been very troublesome, and the Gooseberry-caterpillar numerous. The soil is a rather tenacious loam on a heavy clayey subsoil. The garden site slopes to the north-west. *E. F. Hasleton, Knowsley Gardens.*

— Peaches, Nectarines, and Apricots are not grown in any quantity out-of-doors in this part of Lancashire. Apples and Pears succeed fairly well, and are remunerative to the farmers and market gardeners; good markets, such as Liverpool, Preston, Blackburn, and Wigan, being within easy reach. Black Currants are always in

great demand, but we have been troubled with the mite these last few years. There are some grand crops on the variety Boskoop Giant; the trees are quite free from mite, and the variety appears to be the very thing that was wanted in this neighbourhood. *W. Ashton, W'rightington Hall Gardens, Wigan.*

WESTMORELAND.—Our garden is on a hill composed of thin gravelly soil; and we have generally light crops, except in a wet season. It is a pleasant surprise to have plenty of fruit after last year's cold, wet weather. *W. A. Miller, Underley Gardens, Kirkby Lonsdale.*

(To be continued.)

GOLDER'S HILL, HAMPSTEAD.

LONDONERS should feel happy in the number of open spaces, parks, and pleasure resorts set apart for their enjoyment, not the least beautiful of which is the fine house and grounds of Golder's Hill, Hampstead, acquired some time since by the London County Council. Directly adjoining and entered at several points from the Hampton Heath, it reminds one of a miniature Hampton Court, with its walks and lawns, pleasure gardens and borders, lakes with wild fowl and water plants, vineries filled with crops of luscious Grapes, and a beautiful flower-garden now a blaze of colour. The beauty of the place is enhanced by reason of the undulating nature of the ground, which adds variety and charm to its character. The mansion is utilised for the purposes of a refreshment resort, and scattered on the lawn beneath the trees are cosy chairs round small tables, where one can partake of *al fresco* tea and listen to music from a first-rate band. Well-kept paths lead one through avenues of trees and past shrubberies which include many interesting plants, while at points of vantage numbers of small summer-houses are erected, where one can rest and enjoy most pleasing scenes.

What appears to have formed the old kitchen garden has been converted into a flower garden, above alluded to, and this spot is now at its height of beauty. It is a blaze of bright colour; plants, principally herbaceous species, are in full flower and luxuriating, the colours being judiciously blended and having a fine effect. A fountain throws its stream of water into a small pond, around whose banks are planted aquatics, and where the Heather seems quite at home. Pergolas have been made, and trailing Roses, Vines, the pretty variegated Hop, Wistarias, &c., have been planted to furnish a canopy of greenery and flowers. We noticed a handsome specimen of the purple Loosestrife, *Lythrum Salicaria*, quite 4 feet in height, with several dozen spikes of its showy inflorescences. Not many visitors would recognise in this plant a native of their own woods and river banks. *Phlox decussata* was especially fine in many of the handsomer varieties, *Campanulas*, *Pentstemons*, *Abutilon Thomsoni*, *Zinnias*, *Eschscholtzias*, *Fuchsias*, *Tagetes*, *Dahlias*, *Begonias*, *Gladioli*, and numerous similar flowers, with foliage plants, *Dracenas*, *Ophiopogons*, &c. suitably interspersed.

Around the mansion are well-filled beds of summer bedding plants, and one can peer into a conservatory which adjoins the residence and view the pleasing display.

The Heath at Hampstead, so long associated with a motley crowd, is really most charming, and in places one can fancy oneself miles away from any human habitation. The natural features of the Heath have been carefully conserved, and have often excited the admiration of strangers when visiting it for the first time. The ground being so broken and undulating, it possesses those features which are so pleasingly associated with wild places of this

character. The yellow Gorse and Broom abound, Bracken Fern forms a tangled undergrowth everywhere, while in spring-time the Gean Crab-Apple and Hawthorn are crowded with their snow-white flowers. Plant life is religiously guarded by the custodians of the Heath, and no one may pluck the wild flowers or blossom without involving dire penalties, a very necessary precaution in view of the numerous visitors. The Drosera and other rare plants that could be found on the Heath in former times are now unhappily exterminated. The Harebell is, however, still a charming denizen of the heath, also the Bell-Heather and the Ling. Wood-sage is plentiful everywhere, in company with the yellow and white Goosegrass or Bedstraws, and numerous other members of the native flora.

A straggling stream empties itself into one of the many ponds on the Heath, and here again is seen a touch of natural beauty—the yellow Flag, Arrow-head, Reed-mace, Bulrush, and other water plants forming cover and nesting-places for the moorhen and other water-loving birds.

A sum of £36,174 has already been subscribed towards the £40,000 which the Hampstead Heath Extension Committee is endeavouring to obtain for the extension of the Heath by 80 acres. The acquisition of this land will prevent a fine view from being spoiled, and remove the chances of the builder encroaching in that direction.

COLONIAL NOTES.

NEW ZEALAND.

We have received, through the courtesy of Mr. Kirk, a copy of the Annual Report of the Department of Agriculture in New Zealand for 1903. It forms a bulky and comprehensive record of work done. In the biological section, which is the one that is of most interest to us, we find illustrated articles on the packing and grading of fruit, and the means to be taken to develop the fruit industry of the colony; report on a visit to the Cook Islands, where the tropical or sub-tropical climate is favourable to the growth of Oranges, Cocoa, Cocoa-nuts, Bananas, and other tropical products, if the facilities for export were adequate and the natives could be persuaded to exert themselves; but having sufficient for their own very limited requirements, they have, it appears, no fancy for work for work's sake. The culture of Cotton is not recommended, on the ground that it entails too great exhaustion of the soil to be profitable.

Penny-royal (*Mentha Pulegium*) has become a noxious weed in New Zealand. To get rid of it, it is recommended that the land be kept fallow for a time, and the harrow used often enough to prevent seeding.

A valuable report, embodying the details concerning the life-history of the Phylloxera, is given. The treatment found successful was to " (1) cut off the Vines [level with the ground] and burn them; (2) to pour a little kerosene on the stump, then inject at intervals 1 oz. doses of carbon-bisulphide, 4 to 5 oz. to the square yard; (3) then after two to three weeks dig up and burn the roots; (4) firm the ground and again inject carbon-bisulphide as an additional precaution."

MR. G. H. KERSLAKE.

In a letter from a friend in Sydney, received by last mail, I am informed that at the last annual meeting of the Horticultural Society of New South Wales, this body conferred an honorary life membership on Mr. Geo. H. Kerslake, of Rookwood, N.S.W., the raiser of several well-known varieties of Chrysanthemums, the Bouvardia known as King of Scarlets, and numerous fine Cactus Dahlias and other flowering plants, at the same time presenting him with a Gold Medal in recognition of eminent services

rendered to horticulture. My personal knowledge of the man and his methods enables me to say that the honour is well merited. *C. Bennett, Hale, Cheshire.*

a flower in the direction favoured by popular appreciation.

The illustration at fig. 66 shows a first-rate specimen in a pot, cultivated by Messrs. E.

a good strain of this type of Begonia, though from the florist's point of view the Camellia-shaped flowers should be a little more regular in outline.



FIG. 66.—TUBEROUS-ROOTING BEGONIA SELECTED FROM A GROUP OF PLANTS EXHIBITED BY MESSRS. WEBB AND SONS AT THE WOLVERHAMPTON HORTICULTURAL SHOW, 1904.

TUBEROUS-ROOTING BEGONIAS.

THERE are few summer-flowering plants that are more popular for conservatory decoration and for bedding purposes in the open-air flower-garden than the tuberous-rooting Begonia, and certainly no plant better shows the influence of well-directed efforts on the part of florists to develop

Webb & Sons, Wordsley, and included by them in a group of plants which the firm exhibited at the Wolverhampton show in July. It will be seen that the plant has an erect habit, and the large double, pale-coloured or white flowers are borne well above the foliage. We do not know that the plant bears a name, but it shows

ALPINE GARDEN.

ANEMONE ROBINSONIANA.

THE beautiful cobalt-blue of this pretty Anemone renders it one of the most attractive of cool Alpine plants flowering at the present time. It

is a selected and cultivated form of the white *A. nemorosa*, the familiar Wood Anemone, with flowers measuring nearly 2 inches across the petals, nearly twice as large as the wilding, the plant attaining to 9 inches or more in height. The plant is somewhat difficult to cultivate owing to a tendency to decay at the growing points of the curious twig-like underground stems. It should be grown in a cool shady situation almost solely in leaf-soil, preferably the wind-collected, half-decayed leaves that are found in woods. No sand should be used about the roots. It is by no means a common plant. When seen in full flower it is most charming, and well worth the trouble that may be required to establish it in the garden. *G. B. M.*

PLANT NOTES.

CENTROPOGON LUCYANUM.

Of stove plants the *Centropogon* is one of the showiest and most beautiful. It is useful for general decorative purposes when carefully hardened off. It lasts well, and when properly grown will retain its flowers in good condition for a considerable time. As a market plant I believe there is a great future for this species, and it should be more widely known than at present. Some growers seem to experience great difficulty in growing the plant. The greatest difficulty appears to be in its propagation. The method which I find best is to take cuttings, about 3 or 4 inches long, of fairly well ripened wood, cut immediately below the joint, and insert them at once into 2½-inch pots, in a compost of peat and sand. It is important to prevent the cuttings, or the atmosphere around them, from becoming dry. Plunge the pots in a case with an even, moist atmosphere, where they will root in from two to three weeks' time. After they have become established they may be potted on. Plants for exhibition purposes should be grown on in 6 or 8-inch pots. Careful attention should be given to stopping the shoots, as the best and strongest flowering shoots come from the base of the plant; about six breaks will be sufficient to get good heads of bloom. The plants should be grown under a very thin shade, with plenty of moisture, and be given a little weak soot-water when well established. Plants grown as described above will produce large heads of carmine-coloured flowers. This plant remains remarkably free from insect pests. *S. B.*

OREOCOME CANDOLLEI.

Described in several catalogues as being "hardy," and belonging to the natural order Umbelliferae, this herbaceous perennial is one of the most attractive foliage plants that can be grown in beds or borders. Good examples bearing numerous heads of seed are to be seen in one of the flower-beds in Hyde Park, where it is used as a dot plant. The graceful fern-like foliage which this plant possesses should render it invaluable when better known. As a pot plant for indoor decoration it would undoubtedly prove far more attractive than many species, although its powers to resist unsatisfactory conditions would be limited on account of the succulent character of its foliage. It is a native of the Himalayas, but the date of its introduction to this country appears uncertain. Propagation is readily effected by seeds, or by division of the roots in October or March. *F. James.*

TORQUAY.—The KING has been pleased to accept some photographs of Dr. HAMILTON RAMSAY'S unique gardens at Duncan House, Torquay, which have often been the subject of illustration in these columns.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Masdevallias.—Where a representative collection of these plants is grown there are always some in flower, and together with their dark leathery foliage the flowers form a prominent feature in the cool-house during the whole year. Many of the species, as *M. Veitchiana*, *M. amabilis*, *M. Barleana*, *M. coccinea*, and its numerous varieties of the *Harrya* section, are characterised by flowers of brilliant colouring, and have a splendid effect during the late spring months when arranged with *Odontoglossums* of the crispum type. The orange-scarlet coloured *M. ignea* and its varieties are very desirable Orchids, flowering in the winter and remaining in good condition a long time. The yellow-flowered *M. Davisii*, and the pure white *M. tovarensis* should be included in every collection, the latter species being especially valuable for cutting purposes. In most collections there are sure to be some plants that require repotting or top-dressing. Large overgrown specimens which have become bare of foliage in the centre may be divided and potted up afresh, or may be carefully separated and put into small pots and grown on into vigorous specimens, which in time will be available to take the place of plants that have deteriorated.

Potting.—The best months for potting or repotting the plants are September and February. Previous to disturbing them it is important that water should be withheld from them for a few days, as the roots are less liable to receive injury when dry. All the strong-growing *Masdevallias* make many roots, and accordingly require plenty of room for their development. The pots or pans should be nearly half filled with pieces of Fern-rhizome as drainage, while the potting-mixture should consist of one-fourth fibrous peat, one-fourth leaf-soil, and one-half chopped sphagnum-moss, adding a moderate quantity of broken crocks and coarse silver-sand. Keep the base of the plants on a level with the rim of the pot, and carefully work the compost between the roots. Fill up to within 1½ inch of the rim, and surface the whole with a mixture of peat and moss in equal parts. I prefer this method instead of using all moss, because I find when moss alone is used for covering the compost the roots invariably remain on the surface instead of penetrating into the soil towards the bottom of the pot. When *Masdevallias* root deep into the soil the leaves become strong, and have a fine, green, healthy appearance, and the size and brilliance of the flowers leave nothing to be desired.

Watering.—The critical time with *Masdevallias* is just after repotting, it being an easy matter to over-water them, and thus cause the loss of many leaves and roots. During the first few weeks afford water very carefully, merely sprinkling the soil around the edge of the pot; and as each plant becomes re-established, the quantity should be gradually increased. During late autumn and winter no plant should be given water unless the soil is really dry, for if the plants are kept in a saturated condition the leaves will soon become spotted and unsightly.

The dwarf-growing varieties, as *M. caudata*, *M. Shuttleworthii*, *M. Estradae*, *M. Wageneriana*, *M. Arminii*, *M. ionocharis*, *M. hieroglyphica*, *M. muscosa*, *M. xiphoides*, &c., are always interesting, and a nice plant of either of the above species when covered with its small and pretty flowers forms a lovely object. These dwarf *Masdevallias* succeed in comparatively small pots or shallow pans, and should be placed near to the roof glass. Such species as *M. platyglossa*, *M. leontoglossa*, and several others that produce their flowers in a downward direction should be placed in baskets. Shade the *Masdevallias* from all sunshine, and maintain a moist atmosphere by damping the house down two or three times a day, but whenever the weather becomes cold one damping will be sufficient. *Masdevallias* delight in plenty of fresh air, and whenever the air outside stands above 50° ventilate the house freely.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Peaches and Nectarines.—The amount of rain that has fallen has not been sufficient to penetrate the soil sufficiently to reach the roots of wall-trees generally. Peach-trees and others bearing heavy crops of fruit need thorough waterings and applications of liquid-manure to improve the size and quality of the fruit. Any trees that are watered should be given sufficient water thoroughly to moisten the soil to a sufficient depth. The varieties of Peaches Dymond, Goshawk, Bellegarde, Stirling Castle, and Noblesse are of the best quality, and should be grown in all gardens where Peaches are cultivated. Where trees have made growth sufficient to warrant it go over these once more and secure the growths to the walls, trellises, &c., so as to expose the fruits as much as possible. Leaves overhanging and shading the Peaches may be slightly shortened; this will do the trees no harm and will increase the colouring and flavour of the individual fruits. Any of the trees which have so far borne little fruit, and which are making strong growth should not be watered, but should rather be lifted and replanted, which is the best and surest method of encouraging fruitfulness; this work, however, must not be taken in hand for a few weeks. Do not neglect the very late varieties; these in favourable seasons and in warm localities ripen their fruit very satisfactorily, but in late districts I question whether it is worth attempting to grow them except under glass.

Plums are with us bearing very satisfactory crops. Victoria, Monarch, and Coe's Golden Drop are bearing heavily; the last-named variety is one of the very best late dessert Plums grown, and should be fed at the roots to develop the size of the fruits. Should blackbirds be troublesome, net the trees to protect the fruit, which, if thoroughly ripe and gathered perfectly dry, will keep sound and good for several days if placed in a dry fruit-room. I have rolled the individual fruits in tissue-paper, and in this way have kept them for some time. Lose no time in making preparation for the planting of fresh wall-trees where any are required. Old worn-out trees should not be allowed to remain, but should be grubbed out. The borders should be overhauled, and if possible the walls too; and when planting time arrives only trees of good quality and whose fruit is useful for keeping up a long supply should be planted. Growers not well acquainted with the best varieties would do well to pay a visit to some first-class fruit-nursery before deciding on which to plant.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Tuberous-rooting Begonias.—Plants grown as self-coloured varieties for bedding that are not true to colour should be marked, with a view to prevent mistakes another season. If *Begonias* are kept well watered, the plants will make a good display for some time to come. Plants grown from seeds sown in the spring will now be getting to a good size, and should also be supplied with water, and have the surface of the soil around them stirred. These should also be marked with regard to their colours. Any plants that have a drooping habit should be rejected, erect-flowering ones being preferable.

Fibrous-rooting Begonias.—A good batch of cuttings of these should now be put in. They will root readily round the sides of pots if placed in gentle heat, without too much moisture, and kept well shaded from the sun.

Herbaceous Plants.—As soon as the rains have sufficiently soaked the ground, a few of the early-flowering varieties may be transplanted or parted to fill up gaps. *Doronicums*, *Delphiniums*, and *Stenactis* (*Erigeron*) *speciosa* can be used for this purpose; the last-named is one of the most useful varieties, and requires no staking, while its flowers last for a long time. The ground should be manured well. It is not necessary if the ground is trenched or dug deeply to have

a fresh site, and trenching will to a certain extent save watering in summer. The plants in the borders will require a lot of staking now that tall Asters, Solidagos, Haipaliums, &c. are in flower. Aster amellus var. bessarabicus, now in full flower, is a variety that should be largely grown, both for its colour and habit of growth; Aster horizontalis is a good species, but is rather stiff in growth and appearance. Antholyzas are very bright and useful for tall vases; they are hardy here, and like plenty of moisture and freedom from disturbance at the roots. All varieties of Lychnis have done well; they are very bright and useful as cut flowers, especially Lychnis viscaria splendens plena. Hardy Statice are worth growing, if only for decorative purposes in the winter-time; when cut before they lose their colour, and gradually dried, they are very useful. Eryngiums may be used in the same way. The weather being dry, all late-flowering plants will require plenty of water to keep them fresh and green. The ground should be well mulched where it is cracking. All plants should be labelled; this saves a lot of time and prevents disappointment.

English, Spanish, and German Irises are now dormant and may be lifted. They should be sorted and placed in boxes in a cool place. The ground that is to be planted with them should be dug deeply, and if it is of a stiff nature some sand and old potting soil may be incorporated with it.

Trees and Shrubs.—The continued dry weather is causing great injury to trees and shrubs, any that can be watered, especially valuable specimen trees, should be watered regularly.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Mushroom-beds.—New beds should now be formed and material collected and prepared for succession-beds. The spawning should be done when the temperature of the bed falls below 80°. Where beds are to be formed indoors, particular attention should previously be given to clearing the house of beetles and woodlice. Fill every crevice in which they are likely to find a home with cement or mortar, and place traps in the house to catch any that may find their way in.

Beetle-traps can be purchased cheaply and are very useful, but for an all-round trap for catching beetles, wasps, and flies, we prefer one made from a carboy. This should be fitted with a perforated top connected with a tube the width of the inside of the neck at the top, tapering to about an inch in diameter, and 5 or 6 inches in length. The pests go down this tube in pursuit of beer, or vinegar and sugar, and few that enter ever return. In arranging this trap for cockroaches, sink it in the ground near their runs, or place some rough boards from the ground to the neck of the bottle. When placed in a good position it will serve for twelve months without being interfered with, other than dropping in some fresh bait.

Hoeing.—When the ground is dry work the hoe between the growing crops, and afterwards rake the surface of the soil. If the seedling weeds are killed now it will be almost sufficient for this season.

General Work.—In gardens where labour is scarce, the press of work during summer causes parts of the garden to become neglected, hedges, edgings, odd corners, &c., being left to grow as they will. Where such is the case, no better time than the present can be selected for remedying this. The clipping of hedges is not a difficult task, and to the man who understands and takes a pride in it the work is most interesting. That few do understand it properly is evident from the appearance of many garden hedges, for there are excellent boundaries being spoiled for the want of the exercise of a little judgment when cutting. The operator should recognise it is necessary to cut in hard on the stronger-growing apex, but only to take the tops of the growths in hollow places so as to obtain an uniform breadth and height in

the hedge. Many gardeners are inferior in this work to some farm labourers, many of whom can dress a hedge perfectly. Decayed and decaying rubbish, which usually increases in bulk and smell at this season of the year, is best disposed of by burning. If a sheet of galvanised-iron or of some other non-inflammable material is constructed in some out-of-the-way place on which to burn the rubbish, so much the better, as the ashes can then be kept dry, in which state they are valuable to mix with soot or lime for dusting amongst young plants to prevent the attacks of slugs. Wood-ashes washed into the soil act as a stimulant to the plants themselves.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Planting of Peach and Nectarine Trees.—Where houses are to be planted with trees prepared for that purpose, or with what may be termed "home-grown" trees, that have been lifted each year, or every alternate year, such trees will be well furnished with fruit-bearing wood and fibrous roots in proportion. By the end of September the wood and foliage will be ripe, and the buds sufficiently developed for the trees to be moved. They should be lifted with fairly good balls of soil, and if given careful treatment they will render good service in supplying second early fruits next season. The borders having been prepared as advised in the Calendar for July 16, spread out the roots regularly, and avoid deep planting, so that during the time the roots are active they may readily reach the mulch that will be applied to the surface. When the work is completed, cover the border lightly with droppings from the stables, and afford sufficient water to well moisten the mulching. Afford moderate shade from strong sunshine, and in the event of drying winds close the top ventilators. Syringe the trees frequently with clear water.

Melons.—During September, Melons are much appreciated for luncheon parties, but fruits ripened afterwards have poor flavour, unless grown in structures in which a fairly dry, warm atmosphere can be maintained, with only sufficient moisture to keep the plants in good health. To prevent canker, low temperatures and damp atmospheres must be avoided; and air should be afforded at every favourable opportunity—even by night if a temperature of 70° can be maintained. As the plants approach maturity, water must be supplied with great care, especially if the plants are grown upon beds of fermenting materials. In any case a warm, dry atmosphere must be maintained in order to obtain fruits of good flavour.

Cucumbers.—Give every encouragement to plants that will fruit in autumn and winter. When they have become established apply top-dressings of loam, leaf-soil, and stable droppings, and afford moderate supplies of water to the roots. Let the atmosphere be kept moist, and do not allow the temperature to fall below 65° at night, and 70° to 75° by day. Should mildew appear upon the plants, dust the leaves with flowers-of-sulphur, and maintain less atmospheric moisture. Thin out the old growths from plants now fruiting to secure a succession of young wood likely to bear fruits. Fumigate the structure with the XI-All vaporiser.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Euphorbia (Poinsettia pulcherrima) and E. jacquiniiflora—These plants should be fully exposed to the sunshine from the present time onwards in order to mature the growth. Let the latest plants be placed in their flowering pots, which for the strongest plants need not exceed 6 inches in diameter. Unless very tall plants of *E. jacquiniiflora* are required, the pots for this species need not be more than 5 inches in diameter, while very useful little plants for decorative purposes may be grown in still smaller pots.

Zonal Pelargoniums.—Plants for flowering in winter should now be well established in the pots in which they are to bloom. During the summer they succeed best in the open-air, but care should be taken to transfer them to cold frames before the autumn rains commence. These frames need be covered with lights only during rain, or when frost is anticipated. Continue to remove all flower-buds from the plants until the end of September, unless it is desired to have them in flower during early autumn, in which case the dis-budding should cease at once. With a view to assisting the flowering of these and other winter-blooming plants, such as Bouvardias, Salvias, Libonias, Linums, Eranthemums, &c., weak liquid-manure should be afforded to such as have filled their pots with roots.

Roses in Pots.—Attend to the repotting of these without delay. If the plants are already in as large pots as is desirable, they should be turned out, and after carefully removing as much of the old soil as possible without injuring the roots, replace them in pots of the same size as the last, using a compost consisting of three parts good fibrous loam and one part leaf-soil, adding a little well-rotted manure and some coarse silver-sand. To this may be added a 6-inch potful of bone-meal to each barrow-load of compost. Throughout the summer all flower-buds should be promptly removed from plants which are required to flower during the late autumn and early winter months. For this purpose Teas and Hybrid Teas are the most suitable. Before subjecting the plants to heat, they should be pruned sufficiently to remove the weakest wood. Teas and Hybrid Teas may be grown in a temperature of about 55°, and Hybrid Perpetuals in one of 45° to 50°.

THE APIARY.

By EXPERT.

Seasonable Hints.—All skeps from which the honey is intended to be taken should have this done without delay, as the honey season being over the bees will be feeding on the stores, and thus reduce the amount of honey available. The bees when driven will realise from 3s. to 5s. for a good colony, while the small stocks can be united and sold, or can be kept in a bar-frame hive and fed with a rapid feeder to increase the stock for next season, or united with a weak stock in a bar-frame hive which has given no return during the past season. If the last-named plan is adopted, the bars should be pulled back, allowing eight frames to remain, and leaving a space of about 1½ or 2 inches. Examine each frame to see if the stock is healthy, taking away the queen at the same time, and removing the bees from the skep on to the bars of the stock. Sprinkle a little flour over the bees to prevent them fighting, and as soon as the bees are all below give them a little smoke, after which close up the frames into their proper places, and cover the hive down. Commence feeding if stores are short. Another plan is to take away the queen from the bar-frame two or three days previous to uniting the stocks, afterwards proceeding as described above; or again, to take away the queen from the hive in addition to the one from the skep, and introduce her in the bar-frame hive after an absence of about twenty-four hours. Another plan, if the bee-keeper has more time at his disposal, is to put the queen into a cage with a few worker bees and a little honey, and place them on the top bars for the time mentioned and then release them; the bees by this time will have missed her from below, and take more readily to the new queen without balling her. Any brood in the skep should also be placed in the bar-frame in order to hatch out. Bees at this time of the year are valuable because they live through the winter, and are ready for the following season's work; also the more bees in the hive the warmer will the stock be in the cold weather. Examine and destroy all wax-grubs and moths. All entrances to the hive should be closed up, allowing only a space of about 2 inches for the doorway, and where robbing is going on close up still more severely. Keep all honey away from the apiary. Feed without delay all weak colonies.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Appointments for September.

- TUESDAY, SEPT. 6—
 { Royal Hort. Soc. Comms. meet;
 { also Com. of Nat. Dahlia Soc.
 { meet in the Royal Horticultural Hall.
 { Scottish Hort. Assoc. meet.
- WEDNESDAY, SEPT. 7—
 { Glasgow and West of Scotland
 { Show (2 days).
- THURSDAY, SEPT. 8—Dahlia Show at York.
- FRIDAY, SEPT. 9—
 { Dahlia Show at Manchester
 { Botanic Gdns. (2 days).
- MONDAY, SEPT. 12—
 { United Hort. Ben. and Prov.
 { Soc. Com. meet.
- WEDNESDAY, SEPT. 14—
 { Roy. Caledonian Hort. Soc.
 { Show at Edinburgh.
- THURSDAY, SEPT. 15—Brighton Hort. Soc. meet.
- SATURDAY, SEPT. 17—German Gardeners' Club meet.
- MONDAY, SEPT. 19—
 { Nat. Chrys. Soc. Flor. Com.
 { meet, Essex Hall, Strand.
- TUESDAY, SEPT. 20—
 { Roy. Hort. Soc. Comms. meet.
 { and Nat. Rose Soc. Show in
 { Hort. Hall.
- FRIDAY, SEPT. 23—Roy. Bot. Soc. Gen. meet.

SALES FOR THE WEEK.

- MONDAY to FRIDAY NEXT—
 Large consignments of Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
- MONDAY, SEPTEMBER 5—
 Flowering Bulbs and Lilies at Stevens' Rooms at 12.30.
- WEDNESDAY, SEPTEMBER 7—
 Flowering Bulbs, &c., at Stevens' Rooms at 12.30;
 Orchids at Stevens' Rooms at 4 P.M.
- FRIDAY, SEPTEMBER 9—
 Unreserved Clearance Sale of the entire Collection of Messrs. B. S. Williams & Son's Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.
- (For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—59.3°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 31 (6 P.M.): Max. 63°; Min. 55°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 1 (10 A.M.): Bar., 30.1; Temp., 58°. Weather—Fine rain falling continuously.

PROVINCES.—Wednesday, August 31 (6 P.M.): Max. 63°, S.E. Coast of England; Min. 57°, N.E. Coast of Scotland.

calculated to afford pleasure, brighten the labours of life, or alleviate its sorrows. Fully cognisant of human infirmity, he was ever ready to put a charitable interpretation upon matters which others would have treated with cold aversion or perhaps resentment. Was there ever one, for instance, who could turn aside the wrath of a discontented exhibitor as he could do? Was there ever a public speaker who could, on fitting occasion, more fully attract the sympathy of his

by his *Book about Roses* can never be adequately estimated. It is not scientific, it is not technical, one would not turn to it as a book of reference; but it is literary, and it has the inestimable quality of sympathy. It is almost impossible to read it without sharing the writer's enthusiasm. How many were tempted to become Rose-growers from reading his pages is beyond computation.

SAMUEL REYNOLDS HOLE was born at



THE REV. S. R. HOLE, M.A., VICAR OF CAUNTTON, IN 1870.

Dean Hole. It may be doubted whether among the great army of horticulturists there was ever one more truly popular than Dean HOLE. Alile in the palace and in the bothy, the same genial smile, the same ready wit were manifest. It mattered not whether he was addressing an audience of patricians or a gathering of his "horny-handed friends" the gardeners. His sympathies were human, they were manly. Dignified ecclesiastic though he was, he could share in the relaxations and the pleasures of the humblest. Averse from all that was vicious, he was more than tolerant of what was harmless and

audience by his playful banter and droll humour than he could?

As to his career, we all know what it was, and the daily papers have instructed the outside public who were not familiar with it. Apart from his ecclesiastical duties, which by the way were performed with a zeal and earnestness which were novel when he entered the Church, he was a good example of the English country gentleman—cultured but not pedantic, fond of country life, addicted to sport, passionately fond of his garden, and of Roses in particular. How much pleasure he bestowed on his fellows

Cauntton Manor, Newark, in 1819. In due time he proceeded to Brasenose College, Oxford. Oxonians will remember with relish his humorous stories of Oxford in the early forties. He took orders, and became first of all Curate, afterwards Vicar of Cauntton, and at the same time squire, fulfilling both secular and ecclesiastical duties in such a way as to secure the respect of those who witnessed his efforts.

His passion for the Rose led him to take a most active part in the famous Rose show held in St. James's Hall on July 3, 1858; and when on one particularly dismal day in

December, 1876, he walked into the rooms of the Horticultural Club, then in Adelphi Terrace, where a meeting was being held, at the instigation of the veteran Rev. H. H. D'OMBRAIN, for the purpose of considering the proposal to form a National Rose Society, it was felt that with the active sympathy of REYNOLD HOLE the cause was secure. To the last he extended his active sympathy to the National Rose Society, and the present success of that body may be in large measure attributed to him. At the National Rose Conference at Chiswick in 1889, a meeting specially important in the eyes of the more serious rosarians, using the adjective in the French sense, the Canon—for he was then Canon of Lincoln—presided; and no Rose-meeting of any importance was complete without his stirring presence.

congenial friendships, and have found the happiest enjoyment of my life. Will you tell them that, with an old man's blessing and from a brother's heart? I pray that they may ever cherish in themselves and may communicate to others that love of a garden which brings health to the body, peace to the mind, and thankful worship to the soul. May the words spoken to me more than fifty years ago by my beloved friend, Thomas Rivers, of Sawbridgeworth, be as true to them as they have been to me—"Your delight in the flowers will never leave you." *S. Reynolds Hole.*"

Alpine-Garden Congress.

THE first Alpine-Garden Congress was held recently at the Rochers-de-Naye, above Montreux. It was attended by forty-six persons, representing sixteen gardens and associations, such as the Italian

Tyrolese, and Swiss Alps, and from those among the Cevennes, Vosges, and Jura mountains, as well as from that on the slopes of Etna. The most satisfactory are those in connection with a University, such as those of Caunteret and Chamrousse (University of Grenoble), Aigonal, Cevennes (connected with Montpellier), Pont-de-Nant, Bex (an offset of the University of Lausanne), Linnaea and Rambertia (at which last the Associates were received), which are managed by special Committees; and those in Germany and Austria, in connection with the Universities of Munich and Vienna.

Many gardens have been started merely as a fancy; almost all have been more or less neglected. Some, such as that on Etna, subsidised by the Catania University, and that of Rostania, among the Cottian Alps dependent upon the Protestant schools of Torrè Pellice, are still new. Two exist now merely upon paper, and their representatives came for consultation. These are the Botanic Gardens of Pilatus and of the Rigi-Scheideck, both of which were started by the Lucerne Museum authorities.

Dr. FLAHAULT, Professor of Botany at the Montpellier University, presented reports from four Alpine gardens founded in Bavaria and Austria by the German Association for the Protection and Cultivation of Alpine Plants. These gardens are under the presidency of Dr. VAN WETTSTEIN (Vienna) and of Dr. GOEBEL (Munich), and the general superintendence of Dr. SCHMOLZ, of Bamberg.

The idea of establishing Alpine gardens *in situ* was started in 1875 by Professor KERNER, then at Vienna, and in 1884 by Professor NAEGLI, of Munich, and both these botanists began the experiment; but all was given up until, in 1900, after much correspondence between Dr. SCHMOLZ and the President of the Geneva Association for the Protection of Plants, there was founded in connection with the Congress of German and Austrian Alpine Clubs, a society to further the cultivation of Alpine plants on the German Alps. This association made rapid progress; it included 361 members, 87 sections of the Alpine Club contributed a regular subscription, and further it received annually a subsidy of 1,250 francs from the Central Committee of the Austrian German Alpine Club.

The four gardens above mentioned are those of Schachen (1,800 m.), in the Bavarian Highlands; of Gschnitzthal (2,390 m.), in Tyrol; of Rex Alp (1,770 m.), in Styria; and of Neurent (1,200 m.), in Bavaria. The aim of the Society is to increase the interest of the public in Alpine plants. The gardens are well kept and thriving, the plants are well labelled, and scientific observations are conducted by the two Universities represented by their professors. Further, the most interesting plants are dried and shown under glass in Alpine Club buildings or in mountain hotels.

M. FLAHAULT presented the results of his own work in the Cevennes, where he has established, near the Mont Aigonal (1,565 m.), three different gardens, covering about thirteen acres, one acre of which is turf and devoted to turf and bog plants and sphagnum. There are also about forty species of Ericaceae of the Northern Hemisphere. *Primula farinosa*, sown last autumn, has already flowered freely, which is unusual. This garden is only three years old, but Professor



THE VERY REV. S. R. HOLE, D.P., DEAN OF ROCHESTER FROM 1887.

At the Deanery, Rochester, his garden was, as at Caunton, a special delight, although the fumes from the adjacent cement works, which are allowed to deface and befoul one of the fairest landscapes in our isle, are ill suited for the cultivation of the Rose. But here at Rochester, beneath the grey castle walls and in the shadow of the ancient cathedral, died, on August 27, SAMUEL REYNOLDS HOLE, Dean of Rochester, in his eighty-fifth year, mourned and beloved by "all manner of men." *Requiescat in pace!*

The following extract from a letter, written from a sick-bed at Mold, North Wales, by the late Dean HOLE to Mr. A. DEAN, read at the Gardeners' Dinner of last Michémas day, is worth reproducing:—

"I have been anticipating long and anxiously a meeting with a representative body of those men among whom I have formed the most

Alpine Club, the Italian Association for the Protection of Plants and Trees, known as "Pro Montibus"; the Swiss Association for the Protection of Plants, and the "Ligues Scolaires pour les Arbres." Congresses at Grenoble, Berne, &c., and the meeting of the British Association were synchronous, and prevented many from attending the Swiss meeting.

For some years past the need has been felt for such a Congress to bring together those interested in alpine gardening. In the absence with the British Association of M. CASIMIR DE CANDOLLE, Prince ROLAND BONAPARTE accepted the presidency of the meeting. Many well-known botanists and horticulturists were present; among them were M. MAURICE DE VILMORIN, Professors FLAHAULT and WILZCEK. Reports were handed in by the representatives of the sixteen gardens on the French, Italian,

FABRE has for twenty years been studying Conifers and the forestry of different altitudes.

Experiments with vegetables and with fruit trees at three different elevations have also been made by him, and observations concerning the variability of species and the improvement of pastures. But it is the Montpellier University that is especially connected with this garden, as the students visit it and make experiments in vegetable biology, &c. A laboratory will shortly be established there.

Dr. VOGLINO, of Turin, reported concerning two gardens in the Valley of Aosta (Chamoussia and Jardin Henry), and Professor WILZHECK on a garden and laboratory started by the Lausanne University in the Alps of Vaud. Professor MONNET, of Pinerolo in the Vaudois Alps, explained the purpose of the Rostania, which is situated at an altitude of 1,230 m., in a country rich in rare plants. It is desired to collect and make available in one place all the treasures gathered by the botanist Rostan in this district. The Protestant schools of Torre Pellice are alone responsible for this institution, which the English have assisted.

DE ANTONIOTTI spoke as a representative of the Italian Alpine Club and of the garden called Allionia, established by this Society for the cultivation of alpine plants, at the Monte dei Capucini, near Turin.

Professor HOOL, of Lucerne, showed plans for two intended gardens on Pilatus (2,100 m.) and the Righi (1,600 m.); and the Director of the Linnæa (1,670 m.) and of the Rambertia (2,045 m.), spoke of the work accomplished by these two gardens, which are those most visited, each by its special supporters. The Linnæa, the oldest of existing alpine gardens, receives assistance from the Federal Government, and includes an observatory and laboratory. The late Professor ROMANES contributed to the foundation of this garden by presenting 1,350 fr. to the Managing Committee.

Rambertia, where the Congress was held, needed no description, as it was then in full beauty; and *Papaver alpinum* and *nudicaule* in all varieties and colours ran wild over all the paths and even along the edge of the railway, making the most beautiful of decoration.

A discussion followed the Congress, and the following resolutions were passed unanimously:—

First, that this International Congress shall be followed by similar meetings, in which the Swiss will take the initiative.

Second, that if possible a publication is to be issued, the first part to consist of the Report of this Congress.

Third, that seeds gathered in the different gardens are to be interchanged, and correspondence established between the several institutions represented at the Congress.

Prince ROLAND BONAPARTE then declared the Congress closed, and made a special inspection of the Rambertia. The next day most of the members mounted to Bourg St. Pierre, near the Saint Bernard, to see the garden of the Linnæa, which was in its full beauty.

It would be a grave omission if, in connection with these alpine gardens, we failed to mention the name of HENRY CORREYON, to whose zeal and energy is largely due whatever has hitherto been accomplished.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, September 6, in the Society's Hall, Vincent Square, Westminster. On this occasion the National Dahlia Society's Committee will meet for the purpose of awarding Certificates to new seedling Dahlias [In the book of "Arrangements" this meeting is announced for September 20. Ed.], entries of which must be made to the Hon. Sec., National Dahlia Society, Royal Horticultural Hall, Vincent Square, S.W. A lecture on "Gourds," illustrated by lantern slides, will be given by Mr. J. W. ODELL, at 3 o'clock, and exhibits of Gourds will be welcome.

— The Society will hold, in conjunction with the National Rose Society, an exhibition of autumn Roses, on Tuesday, September 20, in the Royal Horticultural Hall, Vincent Square, S.W. Intending exhibitors can obtain a copy of the prize schedule on application to the Secretary, Royal Horticultural Society's Office, Vincent Square, Westminster, and are requested to note that entries for prizes cannot be accepted after Thursday, September 15. Prizes are confined to Fellows of the Royal Horticultural Society and members of the National Rose Society.

— The Council has been requested to erect "lockers" in the basement of the Hall, in order that exhibitors may rent the same for leaving in them various articles required from time to time for their exhibits. The Council is willing to do this if a sufficient number of exhibitors will signify their wish for such a convenience, and will also give some idea of the size of the "locker" they would require. *W. Wilks, Secretary.*

THE WHITE VALLOTA.—In respect to the white Vallota, illustrated in these pages last week, Messrs. R. VEITCH & SON, Exeter, write as follows:—"In your interesting article on Vallota *purpurea alba* you omit to mention that we obtained an Award of Merit at a meeting of the Royal Horticultural Society on May 25, 1893, for Vallota *purpurea delicata*. At that time we exhibited several plants with flowers ranging from the faintest blush to a clear shade of pink colour. We fear these albino forms are not very strong in constitution, for the few bulbs left over unsold from the importation of 1893 have not flowered since, and are in fact smaller now than when originally imported." Messrs. W. BULL & SONS also write to us, stating that on two separate occasions they have flowered a pure white variety, but in each case the bulb after flowering gradually dwindled and died, although other bulbs of the same importation succeeded well. In the same article, the name Mr. ARTHUR P. RIX should have read "Nix."

NATIONAL CO-OPERATIVE FESTIVAL FLOWER SHOW, CRYSTAL PALACE.—The Festival authorities, assisted by contributions from the various provincial co-operative societies, have for the last three years continued the flower show formerly held by the Agricultural and Horticultural Association, and it promises to grow to the dimensions of former years. The schedule of prizes on this occasion contained just over 100 classes, and the competition was very keen in most of them. One moiety of the classes was open to professional gardeners who, themselves or their employers, are members of co-operative societies; and this afforded opportunity for such well-known growers as Mr. A. BASILE, of Weybridge; and Mr. W. T. STOWERS, of Sittingbourne, among others to stage exhibits of a high order of merit. The other classes were open to members of co-operative societies not professional gardeners; in this division, plants, cut flowers, fruits, and vegetables came from distant parts of the country, and most of these exhibits were of fine quality. The entries were in excess of those of last year, and, as the flower show was such an important part of the week's proceedings, the schedule of prizes is to be extended in the future.

Unfortunately the show lost much of its attractiveness and importance from having to be distributed over several courts, the nave of the building being fully occupied. The interest in the show was considerably enhanced by the presence of an excellent display of Dahlias from Messrs. J. CHEAL & SONS, Crawley.

AN IMPROVEMENT IN GREENHOUSE BUILDING, NEW PATENT.—MR. ALFRED THOMAS GOODWIN, Roscholme, Maidstone, horticultural builder and fruit-grower, claims that his invention enables a cement sill to be used on the brickwork. By means of its attachments to the rafters, the rafters not touching the sill, but leaving a clear air-space, all draught is excluded by the brass plates, allowing water to drip clear and not soak up the rafter, and rot both rafter and sill, as is always the case where wooden sills are used. This invention can be used for renovations and repairs as well as in new work. Mr. GOODWIN tells us he has adopted it in his Rose and Peach-houses with much success.

POTATO "THE PEARL."—Recently a party of Potato experts were visiting the experimental grounds of Messrs. W. W. JOHNSON & SON, Ltd., of Boston, and after seeing one root of "The Pearl" lifted, one of the company offered 5 gs. for the next root before it was dug. The novelty of the situation induced Mr. DEAL, the General Manager of the Company to accept the bid, and this was followed by other bids of a like amount. While this interesting event was taking place, a photographer was sent for, who took several pictures of the party while the sale was in progress. One acre of Potatoes would contain about 9,000 plants, and on this basis the enormous sum of £47,000 per acre would be realised. A sale of tubers of this variety is announced by Messrs. JOHNSON for September 7.

AN INDUSTRY FOR FLORISTS.—A recent experience in a country town within tram ride of London (Uxbridge) has proved that florists need not depend solely on their trade for profit. "Tea and Fruit in the Garden" was found to mean the ordinary necessities of the meal accompanied by Plums and Melon - Pears. These Solanums were a novelty to many customers, but quickly found favour. The garden was but a small paved yard, but made really attractive by hanging baskets and Japanese Fern-frogs, &c., the walls being also covered with boxes and stages filled with plants in flower. The thriving business being done from 4 to 5 o'clock on a fine Saturday afternoon suggests that in other towns florists might add a secondary industry to their chief occupation.

CUCUMBER AND MELON MOULD.—Our correspondent, "G. B.," has sent us Cucumber leaves with circular spots, not to be distinguished from those caused by *Cercospora melonis*, and he claims to have succeeded in killing the spawn by a treatment of manuring, in which potash enters largely. We have submitted these leaves to the authority who first recognised and described this disease (*Gardeners' Chronicle*, September 5, 1896, p. 271), and the following is his report:—"The leaves of Cucumber present just the appearance of those attacked by *Cercospora melonis*, in fact, could not be distinguished from them, save that the spots are entirely barren, and do not bear either the hyphæ (spawn threads) or conidia (spores) of the mould. There is every reason to believe that the mycelium has been affected in some way, and the development of the mould arrested, and there are strong grounds for believing that your correspondent is right, and that by his treatment he has succeeded in checking the development of the mould. We cannot call to mind any record of a similar instance in the history of leaf parasites, but that is no reason why such a hypothesis should be discarded without fair and reasonable trial and experiment. We are

unable to account for the peculiar spots on the leaves sent, other than that they are sterile spots caused by *Cercospora melonis*." M. C. C.

THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord ONSLOW to enquire into and report upon the Fruit Industry of Great Britain, made a tour through some of the principal fruit districts of England from August 22 to 26. On the 22nd a visit was paid to the National Fruit and Cider Institute situated at Long Ashton, Somerset. On the 23rd the Committee visited the fruit plantations on the Toddington Estate in Gloucestershire, and on the 24th those of the Evesham district. On the 25th a visit was paid to the Duke of BEDFORD'S experimental fruit farm situated at Ridgmont, Bedfordshire, and on the 26th to the Sussex County Council fruit station, situated at Uckfield. The Committee visited the Swanley district of Kent earlier in the year.

LUSKERPORE VALLEY SYLHET.—We have received a copy of the Journal of this Society, including original communications on planting and kindred subjects. The Society is a comparatively new one, and we have not previously seen a copy of its Proceedings. Judging from the number before us, the Society is doing excellent work among the Tea-planters, and it has made so good a beginning that there is every reason to hope that its progress will be satisfactory. Mr. J. E. AIRD is the Hon. Secretary.

FLOWER STEALING.—A correspondent writes that he sent to one of the recent meetings of the Royal Horticultural Society a flowering plant not yet in the hands of the public. When the plant was returned to him it was found that the blooms had been removed, and on enquiry it was ascertained, according to our correspondent's statement, that they were taken by a "lady" before the close of the meeting. The lady on being remonstrated with gave the professor "a sweet smile, and drove off in her carriage." This is so serious a statement that we enquired of the officials whether any complaint had been made to them, but this was not the case, and in the absence of more definite information it is not possible to trace the offender. It is a pity that the recipient of the sweet smile did not immediately make his loss known to one of the attendants, or at least request the restoration of the flowers.

PUBLICATIONS RECEIVED.—*The Bystander*, August 17. This includes among its shorter articles a note on Lhasa, and a picture of the city, reproduced from the *Journey to Lhasa and Central Tibet*, by Sarat Chandra Das (John Murray, Albemarle Street).—*Cassell's Popular Gardening*. The eleventh part of this useful publication is now ready.—From the Midland Agricultural and Dairy Institute, Kingston-on-Soar: *Reports on Experiments with Crops and Stock*, carried out in Contributing Counties in the year 1903-1904. Useful work was done at the Institute Farm and at various centres in the counties of Notts, Derby, Leicester, and Lindsey Division of Lines.—*Bullettino della Societa Botanica Italiana*, May and June.—*Nuovo Giornale Botanico Italiano*, Nuova Serie: *Memorie della Societa Botanica Italiana*, July, 1904.—John Dick's Threepenny Standard Library: *Nights at Sea*, by H. M. Barker, illustrated by George Cruikshank; *The Last of the Mohicans*, Fenimore Cooper; *Rattlin the Reefer*, Captain Marryat. These are wonderfully cheap editions.—*Roses and Rose Culture*, by William Paul, 10th edition (Simpkin, Marshall & Co., 1s.).—*Trees, A Handbook of Forest Botany for the Woodlands and the Laboratory*, by H. Marshall Ward, Sc.D. Vol. i., "Buds and Twigs"; Cambridge University Press; London: Clay & Sons, 4s. 6d.—*The Timbers of Commerce and their Identification*, by Herbert Stone (Rider & Son.)

COLONIAL REPORTS AND BULLETINS.—We have received the following:—From the Experiment Station, Peradeniya: *Cacao Spraying*, *Cocoa Manures*, *Green Manures*, and *Catch Crops*. Mr. Ivor Etherington publishes under this title his notes made during a recent visit for the purpose of investigating the work done at Peradeniya. He speaks in the highest terms of the valuable services rendered by the Experiment Station under the superintendence of Mr.

H. Wright. *Proceedings of the Agri-Horticultural Society of Madras*, January to March, 1904. Reports a meeting and a successful flower show held in February.—*Annual Report of the Royal Botanic Garden, Calcutta*, for the year 1903-1904. Details much good work accomplished, and mentions the fall of a large portion of the central section of the great Banyan-tree in March—it is to be feared owing to natural decay. The botanical explorations made during the year included a visit by the Superintendent to Independent Sikkim and Tibet, by the invitation of Colonel Younghusband, in order to organise botanical survey operations in Tibet in connection with the frontier mission. The results of the visit were very satisfactory.—*Annual Report on the Government Cinchona Plantation and Factory in Bengal* for 1902-3. This records an increase in the actual numbers of trees and continued improvement in methods of growth and preparation of Cinchona.—*Journal of the Luskerpore Valley Society of Planters*, season 1903. Sylhet, India. This also includes original communications on planting and kindred subjects, and minutes of meetings of an energetic and useful society.—*Bulletin of the Department of Agriculture, Jamaica*, July. The most important articles are those on School Gardens, by Mr. T. J. Harris; Arbor Day, Breadfruit, and Central American Rubber-tree.—*Botanical Department, Trinidad: Annual Report for Year ended March 31, 1904*. The herbarium work has made good progress; agricultural instruction is increasing and found to be well appreciated.—*Annual Report of the Botanic Station, Tokyo*, 1903-4. The general state of the Station is satisfactory; agricultural teaching in schools has made good progress; experiments in destroying parasolants by the liquid known as carbon-bisulphide, or "Fuma," proved successful.

PLANT PORTRAITS.

BALOGHIA LUCIDA, Endl.—Maiden, *Forest Flora of New South Wales*, pl. 28.

CASTANOSPERMUM AUSTRALE, A. Cunn.—Maiden, *Forest Flora of New South Wales*, pls. 25 and 26.

CERATOPETALUM APETALUM, D. Don.—Maiden, *Forest Flora of New South Wales*, pl. 21.

EUCALYPTUS HEMIPHILLOIA, F. v. M.—Maiden, *Forest Flora of New South Wales*, pl. 22.

EUCALYPTUS INCRASSATA, Labillardiere, and E. REICUNDA, Schauer.—Maiden, *Critical Revision of Genus Eucalyptus*, pls. 13-24.

EUCALYPTUS MACULATA, Hook.—Maiden, *Forest Flora of New South Wales*, pl. 27.

EUCALYPTUS MELLIODORA, A. Cunn.—Maiden, *Forest Flora of New South Wales*, pl. 35.

EVODIA ACEDENS, Blume.—Maiden, *Forest Flora of New South Wales*, pl. 36.

GMELENA LEICHHARDTII, F. v. M.—Maiden, *Forest Flora of New South Wales*, pl. 33.

PANAX ELEGANS, F. v. M.—Maiden, *Forest Flora of New South Wales*, pl. 24.

STENOCARPUS SALIGNUS, B. Br.—Maiden, *Forest Flora of New South Wales*, pl. 23.

VENTILAGO VIMINALIS, Hook.—Maiden, *Forest Flora of New South Wales*, pl. 34.

ROSE COMITISSA CECILIA LURANI, H.T.—A cross between Kaiserin Augusta Victoria and Principessa di Napoli, raised by M. Brauer, of San Remo. Flowers rose-pink.—*Journal des Roses*, June.

CYMRIDIUM ECKNEUM,—*Moniteur d'Horticulture*, August 10.

RASPBERRY SUPERLATIVE.—*Bulletin d'Arboriculture*, &c., August. Bears fruit on the old wood, and is superior in quality to those varieties which bear fruit on the wood of the year also.

PYRUS SCHNEIDERERI, HORT.—*Garten Flora*, August 15. Considered to be a cross between *P. floribunda* and *P. prunifolia*.

BRITISH ASSOCIATION.

(Continued from p. 155.)

SECTION K.—BOTANY.

THE address in this section was delivered by the President, Mr. Francis Darwin, F.R.S., on "The Perception of the Force of Gravity by Plants."

He proposed to summarise the evidence, still far from complete, which might help to form a conception of the mechanism of the stimulus which called forth one of these movements—namely, geotropism. The modern idea of the behaviour of plants to their environment had been the growth of the last twenty-five years, though, as Pfeffer had shown, it was clearly stated in 1824 by Dutrochet, who conceived the movements of plants to be "spontaneous"—i.e., to be executed at the suggestion of changes in the environment, not as the direct and necessary result of such changes. He had been in the habit of expressing the same thought in other words, using the idea of a guide or signal, by the interpretation of which plants were able to make their way successfully through the difficulties of their surroundings. In the existence of the force of gravity we had one of the most striking features of the environment, and in the sensitiveness

to gravity which existed in plants we had one of the most widespread cases of a plant reading a signal and directing its growth in relation to its perception. He used the word perception not of course to imply consciousness, but as a convenient form of expression for a form of irritability. It was as though the plant discovered from its sensitiveness to gravity the line of the earth's radius, and then chose a line of growth bearing a certain relation to the vertical line so discovered, either parallel to it or across it at various angles. This, the reaction or reply to the stimulus, was, in his judgment, an adaptive act forced on the species by the struggle for life. They were not concerned with why the plant grew up into the air or down into the ground, but with the question of how the plant perceived the existence of gravitation. Or, in other words, taking the reaction for granted, what was the nature of the stimulus? If a plant was beaten down by wind or by other causes into a horizontal position, what stimulative change was wrought in the body of the plant by this new posture? At the end of the address Mr. Darwin reiterated his belief in the general, though not the universal, applicability of the "statolith" theory. He found it impossible to doubt that, in the case of the higher plants, sensitiveness to the pressure of heavy bodies would be found to be by far the most important, if not the exclusive, means by which gravity was perceived.

SUB-SECTION—AGRICULTURE.

In an introductory review, Dr. Somerville pointed out that although agriculture had only now been elevated to a position of semi-independence in the programme of this association, it had, in the aggregate, received much attention at the meetings inaugurated with that at York in 1831. In the account of the first meeting in Cambridge in 1833 they found a report by Lindley on the Philosophy of Botany, two of the items in which were of interest to students of rural economy. Apparently at that time much attention was being given to the mode of the formation of wood. Two theories appeared to have divided botanists—the one that wood was organised in the leaves, and sent down the stem in the form of embryonic but organized fibres, to be deposited on the surface of wood already formed. The other theory was that wood was secreted *in situ* by the bark and older wood. It was to the former of these theories that Lindley gave his adherence. Although this problem had ceased to interest, the same could not be said of another subject discussed in the same report—namely, the so-called "faecal excretions" of plants. Lindley attributed to Macaire the demonstration of the fact that all plants parted with a faecal matter by their roots. These excretions he held to be poisonous, maintaining that, although plants generated poisonous secretions, they could not absorb them by their roots without death, concluding that "the necessity of the rotation of crops was more dependent upon the soil being poisoned than upon its being exhausted." He indicated the lines along which investigation might with advantage proceed, one of the questions put forward being "the degree in which such excretions are poisonous to the plants that yield them, or to others." The subject of harmful excretions had recently obtained renewed attention through the work being done at the Woburn Fruit Station. No point had received more striking demonstration there than the harmful influence that growing grass exerted on fruit trees. It had been shown that this prejudicial influence was not due to the withdrawal of moisture, to the curtailment of supplies of plant-food, to interference with aeration, or to modifications of temperature. In Mr. Pickering's opinion, "the exclusion of all these possible explanations drives us to believe that the cause of the action of grass is due to some directly poisonous action which it exerts on the trees, possibly through the intervention of bacteria, or possibly taking place more directly."

ARTIFICIAL MANURES.

In the early forties attention was being directed to a subject that even now had a great attraction for agriculturists—namely, the stimulating and exhausting effect of artificial manures, especially nitrate of soda. Daubeny suggested that manuring should be undertaken on a system of book-keeping—on the one side being entered all the items of plant-food taken out by crops, and on the other all that applied in the form of manures, the two sides of the account being made to balance. This theory of manuring was distinctly suggestive, and often fitted in rather remarkably with actual practice. But they now knew that much of the plant-food offered in manure never entered the crop at all, so that the balancing of the account was due almost as much to chance as to calculation. During the fifties the volumes of the Association contained several important contributions from the two distinguished Englishmen to whom the world's agriculture owed so much, Lawes and Gilbert. Their first contribution was made in 1851, and dealt with Liebig's mineral theory. They drew upon their rich store of experimental data to prove that the yield of Wheat was much more influenced by ammonia than by minerals, and they gave it as their deliberate opinion that the analysis of the crop

was no direct guide whatever as to the nature of the manure required to be provided in the ordinary course of agriculture. Field experiments or demonstrations, which had been such a prominent feature of the educational work of the past decade, appeared to have been first introduced at the meeting of the Association in 1831 by Dr. Voelcker.

FORESTRY.

While agricultural subjects had claimed a considerable share of the time of the Association, FORESTRY had not altogether been overlooked. As early as 1838 they found attention being directed to what had of recent years come to be a question of prime importance—namely, the maintenance of our timber supplies. Captain Cook estimated that “100,000 acres of waste taken from the Grampian Hills for the growth of Larch would in two generations not only supply the ordinary wants of the country, but enable us to export timber.” Assuming a rotation of eighty years, this estimate postulated that the produce of some 1,200 acres, of a value of about £120,000, was sufficient to make us independent of foreign supplies. Such was the estimate of 1838. In 1904 Dr. Schlich, in his volume on *Forestry in the United Kingdom*, after making allowance for woods like mahogany, teak, &c., which could not be grown here, came to the conclusion that “if all these items are added up we find that we now pay for imports in timber . . . the sum of £27,000,000, all of which could be produced in this country.” Assuming as before that the value of an acre of mature forest was £100, this meant that our imports were drawn from 270,000 acres, and to maintain our supplies merely at their present level a forest area of more than 20,000,000 acres, worked on an eighty years’ rotation, was necessary.

FARMYARD MANURE.

Those who had followed the progress of agricultural science in Germany must have noticed how much attention had been given during the past ten years to investigating the changes that took place in farmyard manure during storage under varying conditions. The stimulus and funds for this work had for the most part been supplied by the German Agricultural Society, which in 1892 resolved to carry through an exhaustive inquiry. For this purpose it enlisted the co-operation of several of the most fully equipped stations in the Empire, and the reports that had appeared bore testimony to the industry and analytical ingenuity that had been brought to bear on this important subject. The experiments were originally designed to extend over four years, the first, 1892–93, being devoted to preliminary, chiefly laboratory, experiments; the others to work on a scale more in accordance with farm practice. The subject had been found to bristle with difficulties, and the results obtained with small quantities of manure, or in summer, had not always been confirmed with large quantities of manure, or in winter. In 1897 he published an account of the more important results obtained up to that time, confining himself chiefly to questions of temperature and the loss of organic matter, and the conclusion arrived at was that “none of the conservation agents usually employed appears to have any very important influence on the decomposition of farmyard-manure.” Since then several important reports had appeared. The general conclusion arrived at, and clearly expressed by Pfeiffer, was that excessive loss in manure could be best avoided by storing it in a deep mass in a watertight dung-stand placed in a well-shaded situation, in which the material was firmly compressed. The necessary compression could be secured in various ways, perhaps most conveniently and effectively by means of the treading of cattle. The use of a considerable proportion of moss-litter was strongly recommended. This substance not only absorbed and retained the liquids, but, being acid, it fixed ammonia. In the absence of moss-litter, loamy soil rich in humus would prove a useful substitute.

CHEMICAL FIXATION OF ATMOSPHERIC NITROGEN.

It had for long been the dream of chemists to discover, or welcome the discovery of, a chemical process, capable of industrial application, by which the nitrogen of the air could be made available to replace or to supplement the rather limited supplies of nitrogenous manures. Sir William Crookes looked hopefully to electricity to solve the problem. He pointed out that with current costing one-third of a penny per Board of Trade unit a ton of nitrate of soda could be produced for £26; while at a cost of one-seventeenth of a penny per unit—a rate possible when large natural sources of power, like Niagara, were available—the cost of such artificial nitrate of soda need not be more than £5 per ton. Dr. von Lepel, in giving an account of recent work on this subject to the winter meeting of the German Agricultural Society in February of this year, put the cost of electric nitrate, as compared with Chile nitrate, in the proportion of 24 to 30. Good progress would also appear to have been made in another direction in the commercial fixation of atmospheric nitrogen, and a short account of the results was communicated by Professor Gerlach, of Posen, to the meeting of the German Agricultural Society already referred to, and was published in the same issue of the

Mittheilungen. So far as one might judge from the information available, it would appear that agriculture would not have long to wait till it was placed in the possession of new supplies of that most powerful agent of production, nitrogen, and Sir William Crookes would see the fulfilment of his prediction that “the future can take care of itself.”

(To be continued.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

MUSHROOM GROWING EXTRAORDINARY.—I have just seen in a stationer's shop window in Copthall Avenue, a dish of fine Mushrooms, picked in the underground playground of Coleman Street Schools. The concrete on which they were picked is 8 inches thick, and I examined this floor after I had seen the Mushrooms. R. J. Shebbeare, 39, King William Street, London Bridge.

NEPENTHES AT SHREWSBURY.—The six beautifully “pitchered” plants which gave such a finishing touch to the excellent group of new and rare plants which Messrs. James Veitch & Sons arranged in the large marquee at the recent Shrewsbury Show consisted of *Nepenthes Burkei*, bearing six large, well-developed pitchers; *N. Burkei* excellens, furnished with nine large, well-formed, green-purplish pitchers; *N. Mastersiana*, bearing thirteen fine purple-coloured pitchers; *N. mixta*, ornamented with five large pitchers; and two plants of *N. Hookeriana*, furnished with eighteen pitchers each. The plants were in the best possible condition, and bore ample evidences of high cultural skill. Elevated 6 feet from the ground-line on almost imperceptible green-painted supports inserted firmly in the earth, they were massed round with choice foliage and flowering plants, thus forming effective floral mounds, each surmounted by a *Nepenthes*. This group of new and rare plants was arranged on a quadrant space 3½ feet in length and 12 feet across the middle portion. H. W. W.

THE HOE “PLANET JUNR.”—In answer to the enquirer in the *Gardeners' Chronicle* for August 20 respecting the “Planet Junr.” wheel hoe for walks and kitchen-garden use, my experience shows that one man will do as much work with the “Planet Junr.” as five men could do with ordinary hoes in a stated time, in and about kitchen-garden crops, such as Onions, Beet, and similar crops sown in drills; but I prefer the single hoe for this purpose. If the inquirer intends the hoe for use on gravel-walks I would advise him to get the two-wheeled hoe, as it would prove more satisfactory in every respect, being a little stronger and much steadier with two wheels. I do not think the single-wheel would give satisfaction for gravel-walks. I have a single-wheel hoe, also two double-wheel hoes here, and am speaking of my own experience only. Should enquirer wish any further particulars through the medium of your paper, I would be pleased to answer them. A. F. Grubb, *Seaforde Gardens, co. Down*. [These hoes may be obtained from garden-implement merchants. Ed.]

POINTS AND PRIZES.—An interesting illustration of the very wide differences frequently found between the point-values of exhibits, and the values of the prizes offered for them, was seen recently at Reading. There Messrs. Sutton & Sons annually offer a sum of 21 guineas in five prizes for collections of twelve dishes of vegetables, the 1st prize being 10 guineas, the 2nd 5 guineas, and so on. As a rule, quality is very high and competition exceedingly keen. The recent competition brought fine collections, and when pointing, as required by the firm, on the basis of the Royal Horticultural Society's code of judging was completed, it was found that the 1st prize collection gained 67 points, the 2nd coming with 65; two others had 63 and 62½ points. Between the 1st prize collection (Mr. Bowerman's) and the 2nd prize one (Mr. N. Kneller's), there were only 2 points, yet was there in the value of the prizes no less than 100 per cent. difference, the 1st being in fact just double that of the second. That is not a just arrangement, having regard to the respective merits of the two exhibits, and should have, with a view to

more complete equalisation of prize values, the fullest consideration. At Carshalton, in a class established by the late Mr. A. H. Smee many years since, and with which point values and prize values exactly accord, not only does the method of dividing the prizes according to point-value give complete satisfaction, but good competition is always well maintained. Mr. Bowerman obtained in his twelve dishes at Reading five maximums, and Mr. Kneller but three maximums, but the latter was a little better in Cauliflowers, Tomatos, Turnips, and Carrots; whilst weaker in Peas, Celery, Leeks, Beets, and Parsnips. The quality in four collections was really excellent, and well maintained the Reading reputation for high-class vegetables. D.

FRUIT GROWING.—Under this heading in the *Gardeners' Chronicle*, p. 114, Mr. Crump, V.M.H., gives a rather doleful account of the indifference amongst some of the tenantry on Lord Beauchamp's Madresfield Court Estate to reciprocate his lordship's very considerate generosity in granting to them fruit-trees free of charge. I should hardly have expected to hear of such indifference, especially in a county which, as regards fruit-growing, we always thought more highly favoured than most others of the Midland Counties. Before parting with the fruit trees, one would have thought his lordship would have taken care to see that his own interests were safeguarded by sending an expert from amongst his own employes to see that the proposed site for planting was not only well chosen, but that the land itself was thoroughly well prepared for their reception, and subsequently to see that year by year those trees or orchards were properly cultivated. If a thing is worth doing, it ought to be done well. This supervision would eventually result to the interest of the landlord and also that of the tenant. The tenant's interest would of course centre in the early fruiting of the trees, that of the landlord in maintaining the trees in a healthy condition as a valuable asset for the benefit of the estate. We are informed that, according to the estimate of a Worcester fruit-tree valuer, “trees of ten years of age and upwards are worth from £6 to £10 per tree” [we presume annually], but it is not stated whether during some ungenial seasons those trees might be altogether or partially without fruit. Mr. Crump puts it that 10,000 trees at the rate of £5 per tree would represent a total value of £50,000. Mr. Crump does not say that this would be the amount yearly, and in the absence of such qualifying information we presume that we are right in putting that interpretation upon it; thus yielding a most princely income, equal to the rental of an estate of about 33,000 acres at the very moderate rent of 30s. per acre. But it may be noted that the Worcester valuer's maximum estimate puts the figures up to £100,000. If Mr. Crump gives it as his opinion that the above-mentioned handsome amount is realisable from fruit-trees when skilfully cultivated, the announcement is one which almost staggers the credulity of an ordinary individual, and compels us to ask, What have our so-called fruit-growers been doing during all these years? and being in possession of such knowledge, our surprise is that Lord Beauchamp and his tenantry did not keep the secret all to themselves, and obtain an enormous advantage before the outside world had got aware of it. Well, let us hope that all this will come true; for my own part I am pleased that I have already planted some trees. It is more than probable that the cause of the want of interest in fruit-tree planting amongst tenant-farmers generally may be found in the want of “fixity of tenure.” Farmers are a nomadic class of people, and especially so of late years. When their occupation has become so unremunerative and so uncertain, they may think, and not perhaps without some reason, that after being at the expense and pains of planting an orchard, whilst the land during the unfruitful period brought them little or nothing, they might, through some unforeseen circumstances, have to give up the occupation before they have had time to recoup themselves for all their labour and outlay. The outgoing tenant might probably obtain some modicum of tenant-right, but the most valuable part of the asset would be left behind for the

benefit of the estate. If tenant-farmers are to hold their own against competition from all parts of the world, by all means let them have fixity of tenure; then, and not until then, will fruit-trees, and much more besides for the benefit of the country, spring into existence, metaphorically speaking, with something like magic quickness. Such an arrangement would do more than anything else to hold and secure the yeomen on to holdings in their own country, and bring the peasantry which have already migrated to the towns back to their cottage homes, where I believe it is being arranged that small holdings will eventually be provided for them. Evidently the time has arrived which demands that something should be done. We cannot expect to continue in this country a grand and noble aristocracy to stand around and support our much-loved King, unless they in turn are supported by an equally grand representation of the muscle of the British yeomen and peasantry who have stood through many ages as a "wall of fire around their much-loved isle." *W. Miller, Berkswell, August 22.*

RUNNER BEANS.—In regard to the point raised by your correspondent, "J. Tallack," I can say that the high temperatures recorded this season are the cause of Runner Beans failing to "set." I have observed that when the shade temperature exceeds 75° to 80° Fahr. the blossoms drop as quickly as they open, but during a few days' dull weather it is astonishing how quickly the young legumes form. As the result of the cool weather last week the Beans in this garden are looking very promising, but the flowers that have opened during the hot weather this week are failing to "set." Watering and mulching, although of great benefit to those already set, seem to have no effect upon the actual setting of the Beans if the temperature exceeds 75° F., for I have had them well attended to in this way, and yet whole racemes of flowers have dropped. Regarding Bumble-bees' piercing the calyx, I have examined many flowers, but fail to find any that have been pierced. *J. W. Miles, Manderhill House Gardens, Isleworth, August 30.*

— While our crop of Runner Beans is not so good as usual, I do not attribute this to the Bumble-bee. I have noticed, like Mr. Tallack, that there is an unusual number of these bees this season, but if our partial failure of a crop of Beans is due to the agency of bees, with us it is the Honey-bee, as I have noticed that they have been unusually busy among the flowers of the Runners; even when the flower is fully open, they all pierce the under side of the calyx. I am inclined to think that the poor crop is due to some local influence, for on visiting a friend some few miles distant, I remarked on the luxuriance and quantity of Beans which his Runners were carrying. I was particularly struck with his row of the variety Hackwood Park, distributed this year, which was so totally different in quantity and condition to mine. My friend mentioned a gardener, some four miles from him, who had also complained of the poor crop. This not only applied to the Hackwood Runner, but to other varieties as well. I think this shows that local influences other than bees are responsible for the unsatisfactory crop of Runner Beans this season. *T. H. Slade, Pollimore Gardens, Devonshire.*

PINUS LEIOPHYLLA.

This is one of the more accessible Pines of Mexico. It is found within easy reach of the metropolis, and thence in all directions as far as the States of Vera Cruz, Oaxaca, Durango, and the Territory of Tepic. Further investigation may extend these limits along the Sierra Madre mountains, but the eastern and western specimens have reached the borders of the temperate altitudes. Although there is a large amount of good material available, all of the characters of this Pine are not yet recognised. The tardy development of the cone seems to have been entirely overlooked, while the invariably deciduous sheath of the leaf-fascicles has been forgotten in the determination of some specimens from Guatemala and Mexico.

The earliest figure of *P. leiophylla* was published

by Lambert from specimens furnished by the original discoverers of the species. The length of the leaf, the size of the cone, and other particulars are faithfully drawn, and Lambert's description would have been complete for all purposes of identification had he recognised in

shown on Lambert's plate, and may be easily detected on the ripe cones of this species, as well as on those of *P. pinea* and *P. Chihuahuana*.

P. leiophylla has been associated with *P. Montezumae* in recent arrangements of the genus *Pinus*, but it is clear from the above considerations that its nearest relative is *P. Chihuahuana*, whose short leaf with deciduous sheath and small triennial cone ally it very closely with *leiophylla*. Indeed, specimens of both Pines in the National Museum at Washington, collected by Dr. Rose along the borders which separate Sinaloa, Tepic, Durango, Zacatecas, and Jalisco, show variations in the number of leaves and other points of convergence which suggest the possibility that *P. Chihuahuana* may prove to be a northern form of *P. leiophylla*. It has not yet been found in Guatemala, but there are fictitious *leiophyllas* among the Guatemala specimens, such as Heydes No. 545, and Donnell Smith's No. 3156 and No. 2633. The first two belong to the section *Strobilus*, and are probably Ayacahuite; the third has a leaf section identical with Hartweg's No. 620, which is the type specimen of *P. tenuifolia*, Benth. Further north, Pringle's No. 8054 of Esclava, is one of the *Montezumae* group, but his No. 8182 of Las Vigas is correctly labelled and is a true *leiophylla*. *George Russell Shaw, 9, Park Street, Boston, U.S.A.*

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

AUGUST 23.—*Present*: Dr. M. C. Cooke, in the Chair; Messrs. Holmes, Odell, Saunders, Hooper, Douglas, Rev. W. Wilks, and Dr. Masters. Professor Liberty Bailey, of Cornell University, and Professor L. J. Jones, of Vermont University, Burlington, U.S.A., attended as visitors.

Discussed Potentillas.—Mr. SAUNDERS reported as follows on some specimens submitted to him:—"The diseased blossoms of a *Potentilla*, exhibited by Mr. Bowles at the last meeting, were attacked by eelworms, and probably by the species which is the cause of the 'Cauliflower disease' in the cultivated Strawberry (*Aphelenchus fragariae*), a disease that has been known to ruin nearly half the crop by rendering the flowers abortive. I am afraid that there is no real cure for this infestation, and that the best thing to do is to burn the affected plants and the soil round their roots. If the plant be a valuable one, it might be of use to cut away all the parts which show any sign of being infested, and to remove as much as possible of the soil round the roots. The following dressings have been found very useful in the case of Clover which was attacked by the 'stem eelworm' (*Tylenchus devastatrix*)—three parts of sulphate of potash, and one of sulphate of ammonia or sulphate of iron."

Leaf-miner in Lilacs, &c. The leaves of the common Lilac, exhibited by Mr. HOLMES, are attacked by the caterpillars of the "Lilac-moth" (*Gracillaria syringella*). The caterpillars had, however, all left the leaves to pupate. The Willow-leaves also shown by him were attacked by a small beetle, *Phratora vitellinae*; and some other Willow-leaves by the grubs of one of the saw-flies belonging to the genus *Nematus*. The leaves of the shoots of Black Currant, also submitted to Mr. Saunders, are covered with small transparent blister-like pustules, the cause of which he could not determine. On examining them under a microscope he could find no trace of insects, mites, or fungi in them. There were a few acari and thrips on the leaves, but they were not the authors of the pustules, nor of the injury to the leaves. Mr. Saunders suggested that the pustules may be of bacterial origin. Cut off and burn all the shoots bearing leaves which are affected.

Fungus on Charred Gorse.—Some specimens of fungi observed on Gorse after being burnt were submitted to Dr. Cooke.

Fungus on Cypripedium Leaf.—A leaf attacked by a fungus was submitted by Mr. DOUGLAS, and referred to Dr. Cooke for examination.

Variation in Ferns.—Mr. DRURY sent a unique and interesting example of symmetrical variegation in a British Fern in the form of a frond of *Polystichum angulare* var. *pulcherrima*, Moly., found many years ago in

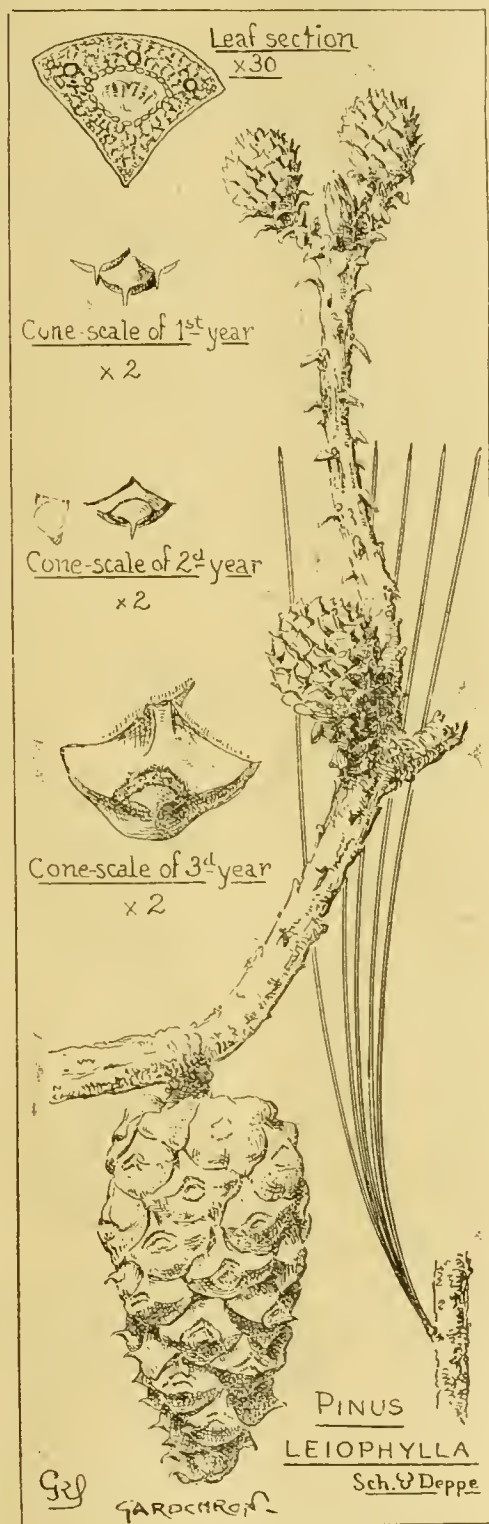


FIG. 19.—*PINUS LEIOPHYLLA* SHOWING THE THREE ANNUAL STAGES OF GROWTH IN THE CONES, ETC.

his text the triennial cycle of growth that he clearly indicated on the drawing of the cone-scales.

In common with *P. pinea* and *P. Chihuahuana*, this Pine does not ripen its fruits until the third season. The growths of the first two years of these Pines are relatively very small, but they leave their imprint on the umbo that crowns the mature apophysis in the form of two distinct annual layers. This double umbo is clearly

Dorsetshire. The plant is perfectly constant, and curiously enough perfects its fronds as purely green ones, the variegation appearing subsequently as they ripen. The Fern is furthermore interesting as being the only known example of a constant asporous form of *P. angulare*, the sickle-shaped, inferior pinnules developing prothalli from their tips when layered. The resulting sexual plants, however, are irregular and depauperate, with extremely rare exceptions. Mr. Drury was indebted for this plant to Dr. Stansfield, of Reading.

Rare Plants from M. Henkel, of Darmstadt.—Dr. MASTERS exhibited fruiting specimens of *Ribes pinetorum*, a native of New Mexico, bearing globular, purplish-brown berries thickly studded with long, stiff, bristly hairs. Also flowers of *Scutellaria (Dracoecephalum) baikalensis* with large bluish flowers like those of our Skull-cap, but larger. It is described as a fine hardy herbaceous plant flowering continuously in summer and autumn, and suitable for a warm and sunny place on the rockery or front row of the herbaceous border. With these came a plant of *Cyperus fertilis*, said to be a native of tropical Africa, with long green stems bearing close spikes of whitish bracts and flowers. It thrives in a partially shaded, moist situation, in a warm temperature. It makes a good plant for hanging baskets. The specimens were forwarded, at Mr. Henkel's request, to the gardens of the Society at Wisley.

Pitcher-like Leaf of Polyrhynchium.—Mr. MALCOLM BALL sent a leaf with a funnel-like outgrowth, such as is not uncommon in Cabbages, &c.

Syncarpy in Apples.—Mr. HUGH ALDERSEY sent specimens of two Apples partially fused together at their base.

Variegated Maple.—Mr. F. LLOYD sent specimens of crippled foliage of *Acer Negundo variegatum*, which had suffered some check to growth, and was attacked by aphides and other pests.

Fungus on Grass.—Rev. W. WILKS showed specimens affected with rust *Uredo rubigo vera*.

Diseased Oats.—Mr. HOOPER showed specimens of Oats apparently attacked with eel-worm. The specimens were referred to Mr. Saunders for examination and report.

Cuscutopsis chrysophylla.—Dr. MASTERS showed fruiting specimens of this handsome Californian Chestnut. It has the lower surface of the leaves of a golden yellow colour, and the bristles of the husk are of a rich purplish brown. The specimen was received from Mr. Lindsay, of Edinburgh.

Twofold Nepenthes.—Dr. MASTERS exhibited from Messrs. JAS. VEITCH & SONS a specimen in which two leaves were joined at the base, so that the specimen had the appearance of a single leaf branched below the middle and each branch bearing a pitcher.

BRIGHTON AND SUSSEX HORTICULTURAL.

AUGUST 23, 24.—This resuscitated and important Society held its annual summer show in the Dome and adjoining Corn Exchange, Brighton, the first-named commodious building accommodating chiefly cut flowers of hardy plants, Roses, Gladioli, Dahlias, tuberous-rooted Begonias, and ornamental tables of stove and greenhouse plants, arranged with the idea of affording agreeable effects, and of testing the artistic capacity of professional gardeners in what has become an essential part of a gardener's every-day work. The Corn Exchange was filled with dinner-table decorations, the work chiefly of ladies residing in Brighton and adjacent places; with fruit both indoors and forced, vegetables, hardy cut flowers, table plants, and florists' flowers. At one end of this building Messrs. BALCHIN & SONS, nurserymen, Brighton and Hassoeks, set up an imposing group of Palms, and a foreground of *Codiaeums* in variety, a few Palms, &c. Beneath the Lilies a setting of *Caladiums* having chiefly red leafage was placed, interspersed with Ferns and *Isolepis*; while *Caladium argyrites* was used for bordering the whole. We can only mention a few of the principal exhibits.

Collection of cnynt dishes of Fruit fit for Table Use.—There were six exhibits in all, and the 1st prize was taken by Mr. J. GORE, fruit-grower, Polegate, with fine large bunches of Grapes *Madresfield Court* and Muscat of Alexandria, Brown Turkey Figs, Pineapple Nectarine, Harrington Peaches, Clapp's Favourite Pear, Perfection Melon, and Worcester Pearmain Apple; Mr. E. Neal, gr. to J. A. NIX, Esq., Tilgate, Crawley, was 2nd, with fine bunches of Black Alicante Grapes, medium-sized bunches of Muscats, very choice Bellegarde Peaches, Beauty of Bath Apples, Beurré Giffard Pears, and Jefferson Plums.

Three bunches of Muscat of Alexandria Grapes.—The last-named exhibitor was placed 1st in this class with ripe, well-coloured, moderate-sized bunches. There were eight exhibits in this class.

Three bunches of Black Hamburgh Grapes, of which only five lots were shown, 1st, Mr. C. EARL, gr. to C. E. D'AVIGNOR GOLDSMID, Esq., Somerhill, Tonbridge, with neat, compact bunches, jet black and perfect in every point.

Grapes, two bunches of any variety.—1st, Mr. CHAS. EARL, gr., Somerhill, Tonbridge, with Muscat of Alexandria.

Pair of Melons.—The best were shown by Mr. J. GORE, Polegate, the varieties being Hero of Lockinge and Sutton's Perfection.

The winner in the single fruit class was Mr. C. BLURTON.

Pears in season were not numerous, and the best in appearance were Clapp's Favourite, shown by Mr. F. W. THOMAS, Wannock Gardens, Polegate, 1st; and Windsor, shown by Mr. A. H. PARSONS, Lewes, 2nd. Immature fruits of late and long-keeping and culinary varieties were likewise shown, but it is yet too early to test these.

Apples were largely shown, both dessert and culinary, and were generally of good quality; and such early dessert varieties as Beauty of Bath, Lady Sudeley, Worcester Pearmain, Irish Peach, Mr. Gladstone, Juneating, and Princess of Wales, were remarkable for high colour.

Plums in dishes of four were few, but the specimens observed were of great excellence. The 1st prize, taken by Mr. J. Dedman, gr. to Mrs. PARSONS, The Wallands, Lewes, consisted of dishes of Washington, Denyer's Victoria, Purple Gage, and Oullin's Golden Gage. The 2nd prize fell to Mr. F. W. THOMAS, fruit grower, Polegate, his Kirke's and Oullin's Gage being very fine fruits.

The 1st prize in the single dish class was taken by Green-gage, shown by Mr. A. H. PARSONS, market gardener, Lewes.

Four dishes Culinary Apples.—1st, Mr. A. H. PARSONS, Lewes, with New Hawthornden, Warner's King, Peasgood's Nonsuch, and an unknown variety.

The best four dessert Apples were shown by Mr. F. W. THOMAS, and consisted of Beauty of Bath, Irish Peach, Kerry Pippin, and Lady Sudeley.

Open Collections of Vegetables, nine kinds.—1st, Mr. W. MANTON, with an altogether very fine exhibit, including Best-of-All Runner Beans (about 10 inches in length), Solid White Celery (well blanchd), large Carrots Intermediate, Gladstone Peas, Blood-red Beet, Perfection Tomatoes, Ailsa Craig Onions. This exhibitor took the Society's Silver Medal in addition to the money prize; 2nd, Mr. A. B. WADDS, gr., Paddockhurst. This lot contained large Up-to-Date Potatoes, large, solid Autumn Giant Cauliflowers, l'raguel's Exhibition Beet, Best-of-All Runners, and fairly well blanchd Celery; 3rd, Mr. Dancy, gr. to Mrs. CREYKE, Holbrook, Horsham. The Celery Satisfaction, Potatoes, Runner Beans, and Peas were good. In this class competition was very keen, and the exhibits numerous.

Collection of Potatoes, six varieties.—1st, Mr. M. TOURLE, gr. to F. BARCHARD, Esq., Horsted Place, Uckfield, with General Roberts, L'Idéal, Sensation, Snowdrop, The Factor, Duke of York, all clean skinned, well-grown kidney varieties; 2nd, Mr. J. ROGERS, gr. to C. E. F. STANFORD, Esq., Rottingdean; his exhibit including King Edward VII., Royal Kidney, Peach Blossom, and others; 3rd, Mr. A. B. WADDS, Paddockhurst, whose exhibit included Findlay's Challenge, Evergood, and Sutton's Favourite. In every instance the tubers were fully grown and of large size.

Cut Flowers, Annuals (open).—1st, Mr. J. DAVIS, gr. to Major THURLOW, Buckham Hill House, Uckfield, with a very fine selection, among which we remarked *Salvia Horminum*, *Rudbeckia bicolor*, *Cosmos*, fine large and full African Marigold, *Viscaria cardinalis*, German Asters, Tenweek Stock, *Chrysanthemum Burdigianum*, double-flowered Zinnias, *Phlox Drummondii*, Sweet Peas, &c.

Tables of Carnations (open).—1st, Miss SKIFFNER, Coombe, Lewes. With this prize there was included a Silver Cup, to be held by the winner for one year only, but to become the property of the winner during three consecutive years. Miss SKIFFNER won it in 1903, and she now takes the Society's Silver Medal also. The table was brightened with Carnations in many varieties, and some few Picotees, but none were under name.

Decorated Dinner Tables.—Of these there were ten of various degrees of excellence. Mrs. RAPPLEY, East Grinstead, was 1st. This lady's exhibit consisted of pink Carnations and blooms of a pink-flowered Ivy-leaved Pelargonium. The Society's Silver Medal accompanied the money prize in this case.

Stove and Greenhouse Cut Flowers.—1st, Mr. J. DAVIS, with a fine selection, including *Gloriosa superba*, *Dipladenia amabilis*, *Rochea falcata*, *Lapageria rosea* var. *alba*, *Allamanda Hendersoni*, *Lasiandra macrantha*, *Kalanchoe flammea*.

Collections of Hardy Flowers.—1st and Bronze Medal Mr. J. DAVIS, with *Lilium auratum*, *Phlox Coquelicot*,

Crocusma aurea, scarlet *Pentstemon*, *Solidago*, *Saponaria officinalis*, *Kniphofia uvaria*, *Gladiolus*, *Helianthus* "Miss Mellish," *Echinops Ritro*, *Phygelius capensis*, &c.; 2nd, Mr. HUGH MACFADYEN. Very fine were his bunches of *Lilium auratum*, *Gladiolus brechevleyensis*, *Achillea Ptarmica*, *Kniphofia*, *Helenium grandiflorum*, *Hyacinthus candicans*, *Lilium tigrinum*, *Dracocephalum*, &c.

Twelve vases Cactus Dahlias, distinct varieties.—1st, Messrs. J. STREDWICK & SONS, with Geo. Gordon, Columbia, Pearl, Fairy, Ivanhoe, Ella Kraemar, Radium, Antelope, &c.; 2nd, Messrs. J. CHEAL & SONS, including Raymond Parkes, F. M. Stredwick, Conrad, J. H. Jackson, H. P. Robertson, Mrs. Clinton, &c.

Twelve spikes of Gladiolus.—1st, Messrs. J. CHEAL & SONS, with varieties of the Childsli strain, fine large blooms and clear tints.

Dahlias, Pompons and Twenty-four Show varieties.—1st, Messrs. J. CHEAL & SONS.

Tables of Flowering and Foliage Plants.—1st, Mr. H. HEAD, The Drive Nursery, Hove, a bright-looking table, on which were disposed *Phygelius capensis*, *Plumbago capensis*, *Gloxinias* in variety, *Begonia Dregei*, *Lilium lancifolium album*, Palms and grasses, and *Campanula fragilis*.

Table of Plants (Gentlemen's Gardeners).—1st Mr. W. ADAMS, for a moulded-up table on which the exhibitor had *Lilium rubrum*, *L. auratum*, *Zonal Pelargoniums*, *Begonia floribunda*, *Campanula fragilis*, *Coleus*, *Maidenhair Ferns*, &c.; 2nd, Mr. W. E. ANDERSON, gr. to B. PARISH, Esq., Melodia, Preston Park Avenue. This table consisted of *Adiantums*, *Lilies*, *Coleus*, *Celosia pyramidalis*, small-flowered *Begonias*, *Burmanna Caladiums*, &c.

Miscellaneous Group of Plants (Gentlemen's Gardeners).—1st and Bronze Medal, Mr. W. E. ANDERSON, with a light, graceful arrangement in which *Lilies* of different species, *Dracenas*, *Codiaeums*, *Celosia pyramidalis*, *Campanula pyramidalis*, formed the greater part. Greenery was furnished by *Adiantums* and small Palms.

There were eight floral groups.

Miscellaneous Group (open).—1st and Silver Bowl presented by J. W. Howlett, Esq., which he has finally won, having taken it for three years in succession, and the Society's Silver Medal. The group was a rich one, containing several plants of *Hydrangea paniculata*, *Lilium auratum*, *L. lancifolium rubrum*, and *L. l. album*; a few *Codiaeums*, *Begonias*, *Pandanus Veitchii*, *Caladiums*, *Gloxinias*, with just as many *Adiantums* as gave a foil to the bright colours of the flowers.

SPECIAL PRIZES.

For Messrs. Tilley Bros.' prizes for a collection of vegetables, 1st, Mr. J. DURRANT, Pakyns Lane, Hurstpierpoint, including fine Onions and Peas; 2nd, Mr. H. BRADSHAW, Itchingfield, with fine, short, stumpy Carrot Favourite, Best-of-All Runner Beans, &c.

Messrs. Cheals' prizes, for six vases Cactus Dahlias, 1st, Mr. W. MANTON (Gold Medal); 2nd, Mr. T. DANCY (Silver-gilt Medal).

Non-competitive Exhibits.—Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed tree-*Ivies*, *Skimmia fragrans*, *Polygonum baldschuanicum* in flower, *Eurya latifolia*, Sweet Bays, *Bambusa aurea*, *B. anceps*, *Clematis*, and *Vitis heterophylla* (Silver-gilt Medal).

A table of Roses, the majority Teas, shown by Mr. G. W. PIPER, Nurseries, Uckfield—a fresh-looking collection of new and old varieties, to which the Society's Silver Medal was awarded.

Carnations in tall glasses, viz., Royalty, Fair Maid, Harry Fenn, Enchantress, Floriana, were shown in profusion by Mr. A. F. DUTTON, The Nurseries, Bexley Heath, Kent.

Messrs. CHEAL & SONS had a long table filled with cut blooms of Cactus and Pompon Dahlias, Herbaceous plants, Ferns, Palms, together with dishes of Apples and Pears, set along the edge.

Mr. W. J. WOOLLARD, Cooksbridge Nurseries, Lewes, showed a table filled with cut flowers—Roses in threes, a handsome lot of *Souvenir de la Malmaison*.

In a recess in the Dome, Messrs. TILLEY BROS., Seed and Bulb Merchants, London Road Brighton, had arranged a quantity of bulbs of Hyacinths, Tulips, Scillas, Lilies, Daffodils, Crocus, &c.

BLYTH HORTICULTURAL.

AUGUST 27.—The eighteenth annual show of the Blyth (Northumberland) Floral and Horticultural Society was held in the Bath Terrace Grounds. The entries were as numerous in the Open class as in previous years. That the show fully maintained its standard was to be seen in many ways. Plants were magnificent in bloom. Table decorations made an extensive display. The Roses and Dahlias formed two features of the show. The principal prizewinners were as follows:—Messrs. Harkness, Thos. Battensby, J. Cawthorne, M. Allison, G. Gardner, J. Robson, S. Bewick, T. Coxon, W. Taylor, M. Young, J. Marshall, E. Nicholson, W. Forster, J. Swann, A. Allen, W. Brown, R. Nelson, &c.

ENGLISH ARBORICULTURAL.

MEETING IN ABERDEEN.

AUGUST 24-26.—When the members of the English Arboricultural Society chose Aberdeen as headquarters for their summer gathering, they knew full well that they would have the opportunity of seeing some splendid examples of forestry, and in this they were not disappointed.

DURRIS.

The first of the series of excursions took place on Wednesday, the destination being the beautiful estate of Durrus, the property of Mr. H. R. Baird, whose policy of advanced estate improvement in all departments is well known. Under the presidency of Mr. George Marshall, Frimstone, Liphook, Hants, the company, to the number of about 130, left the Palace Hotel, Aberdeen.

Near the east entrance lodge of Durrus, the party was met by Mr. Baird, the proprietor, Mr. Baird, factor on the estate, and Mr. John Crozier, the head forester, &c. On entering the gateway, the prospect presented by the avenue was magnificent, the various Douglas Firs and stately specimens of *Abies Fraseri* attracting special attention. The Larch, Spruce, Douglas, and Menzies Fir, all of them splendid specimens, were seen to the greatest advantage, and the prospect was varied by graceful Birch-trees, lordly Sycamores, tall, wide-spreading Beech, sturdy Oak, and beautiful Lime-trees. In front of the mansion several fine Cedars were greatly admired, as also a very healthy specimen of Fir, which is known as the Tulip-tree (?).

In describing the policies, Mr. John Crozier, head forester, said:—"The grounds have been laid out with great taste, and contain an extensive collection of deciduous and evergreen trees and shrubs; many of these, however, have proved unsuited to our northern climate, and with the exception of the North American imports, few others of the former are likely to be of much practical benefit to British planters. The Douglas Fir of Oregon takes precedence of all others, and owing to its free growth, freedom from disease, and wonderful adaptability to a wide range of soils, subsoils, and elevations, has proved to be a valuable asset to our limited number of commercial timber trees. Its timber, when sylviculturally grown and matured, is of excellent quality, takes on a beautiful polish, and is especially suited for house construction. Menzies Fir takes the second place, and resembles the Douglas Fir in its adaptability to soils, &c. It braves the elements on the lower slopes of the Grampian Hills, where Spruce and Scots Fir refuse to make headway; but its timber is much inferior to that of the Douglas. Amongst the varieties of the Silver Fir, the following all do well here, and form clean, cylindrical boles: *Abies nobilis*, *A. magnifica*, *A. concolor*, and *A. grandis*, and, like the exotic Spruces, yield large quantities of fertile seed.

The commercial woods cover an area of nearly 4,000 acres, and are composed chiefly of Larch, Scots Pine, and Spruce, while Douglas Fir and Menzies Fir have been freely planted in the younger plantations. Hardwoods have not been planted extensively, and the result attained generally is not encouraging. With the exception of the plantations in the Dee Valley, the soil here is composed of light sandy loam, resting on gravel; all the remainder of the estate rests on gneiss, the soil alternating from a rather light loam on the low ground to a stiff boulder clay at higher elevations. Larch, Spruce, Douglas, and Menzies Fir all do well on the cool bottom, but Scots Fir, although making rapid growth in its younger stages, does not continue its growth, and may be said to have attained its maximum of value by the time it has reached its seventieth year. Clear felling is adopted in all mature woods, but in several of the immature woods, which have become broken in canopy through various causes, a further thinning out of the weaker stems was considered advisable, and the ground afterwards filled up with Douglas Fir, forming a two-storeyed combination. The parts at first operated on were under Larch and hardwoods, and these have turned out successfully. It is now intended to extend the practice to the Scots Fir plantations of the same class. Owing to the prevalence of Pine-weevil it is necessary to allow the old roots to decay, and an interval of not less than four years must elapse before the ground can safely be restocked.

Aberdeen is the chief market for soft woods, and there is a steady demand for all classes of timber. The box-making, fishing, granite and other industries absorb almost the entire output of wood in the north-eastern counties, and wood merchants experience an increasing difficulty in procuring Scots Fir of sufficient size for the requirements of their trade. Prices generally range as follows where the wood is within reasonable distance of a railway, and the trees sold standing: Larch, 10d. to 1s. 2d.; Scots Fir, 6d. to 8d.; and Spruce and Silver Fir, 5d. and 6d. per cubic foot.

Pine woods on this estate have proved a remunerative investment, and recent sales show a net return in ground rental far in excess of the actual returns from cultivated lands in their immediate vicinity."

The delegates were particularly interested in the beautiful golden-tipped variety of the Sequoia (Wel-

lingtonia) gigantea, and also in the somewhat rare tree *Athrotaxis laxiflora*, a relation of the Yew family. Mr. Crozier stated that on one tree he had counted no fewer than 16,000 cones. The Weeping Beech-trees were greatly admired, as were also the *Nobilis* and President (?) Firs. Much admired also were the many fine specimens of *Thuja gigantea*.

A visit was paid to the sawmill on the estate, where operations were seen in progress in cutting large planks of the Douglas Fir.

Thereafter the party skirted a plantation of Japanese Larch and another of the Douglas Fir five to six years old, several of the trees in the latter showing 3 to 4 feet of growth for a single year. The trees are all reared from seeds at the nursery on the estate, which was also visited. It was explained that three to four generations of the Douglas Fir had been reared on the estate, so that it was now thoroughly acclimatised. The nursery was acknowledged to be one of the finest which the practical men had ever seen, admirably sloped, drained, and arranged, and presenting a very neat appearance.

At the luncheon which was most courteously provided for the members, Mr. McGibbon, head forester to Lord Fitzwilliam, Rotherham, accurately voiced the feeling of those present when he said that that day they had been taken through some of the finest woods he had ever seen, whether looked at from an ornamental or a timber point of view.

BALMORAL CASTLE.

The second excursion was to his Majesty's Highland home, Balmoral Castle, and the adjoining forests. There was another large turn-out, over 100 leaving with the special train that took the party from Aberdeen to Ballater, the terminus of the Deeside Line. The railway journey commenced in beautifully bright weather, and the scenery on the river, the hills, and along the valley was much admired, and provided a great attraction for the members of the Society. On arriving at Ballater coaches were in waiting, and they were met by Mr. John Michie, than whom no better guide, philosopher, and friend could have been found for such a party, seeing that he was head forester at Balmoral for many years previous to his appointment as H.M. factor on the Royal Deeside estates. During the drive to Balmoral deep fringes of English Oak on the left and the Birches stretching away into the hills on the right were admired and commented upon. As the char-a-bancs rose higher and higher up the hilly highway, glimpses of the silvery Dee were obtained through the pretty foliage. By-and-by, Lochnagar came into full view, and the admiration by the English visitors of the hills was most marked. The cloud-capped heights were, on a nearer view, seen to have retained snow in their rocky clefts. Surprise was expressed at the great altitude at which Scots Fir grew and flourished. The Junipers, which grow in abundance on the barest of the roadside slopes, were noticeable, in the view of the arboriculturists, from the fact that they had apparently grown from seeds strewn by birds.

Crossing the Dee by the substantial bridge on the south road, the party drove up the avenue to Balmoral Castle. In this avenue there are many fine examples of ornamental trees, several of them planted by members of the Royal Family and other distinguished personages to mark special occasions. One tree, which thrives well in the policies, and is seen to great advantage in the avenue and elsewhere is the *Abies nobilis*, a very effective Fir from a sylvicultural point of view.

Alighting in front of the Castle the party, under the leadership of Mr. Michie, proceeded to inspect several of the trees on the lawns to the west, which include many planted by members of the Royal Family from Queen Victoria downwards. All those trees, as also a number of others planted on commemorative occasions, show vigorous growth. Going down the stone Pine avenue, the company visited the stables and coach-houses, then returned across the lawn to the hothouses, where Mr. Troup, the head gardener, has at present an excellent display of blossom, Begonias and Pelargoniums being prominent, while the flower-beds present a bright appearance of harmonious colour. Proceeding, the party, led by Mr. Michie, commenced the ascent of Craig Gowan, at the top of which there have been several noted bonfires to mark important rejoicings in the history of the nation. The footpath leading along the slope of this hill is known as Michie's Walk, a compliment to the factor who laid it out during a portion of the twenty-one years he occupied the important position of head forester on the estate. This walk was a great favourite with Queen Victoria, who frequently passed along it in her pony or donkey chaise, and from which she loved to look on the beautiful scene in the valley. The great beauty of the walk is the way in which nature has been left undisturbed so far as the undergrowth is concerned. The Juniper grows luxuriantly; there are numerous Oaks, Ferns, and Cranberries; Blackberries and Cranberries are seen in patches amongst the mountain Heather, and the mountain Pine, Spruce, Fir, and Birch-trees present a charming sight.

The party once more entered the conveyances and drove through the famous forest of Garmadie and

Ballochbuie, where the *Pinus montana* (? *silverstris*) is seen to so much advantage, the trees, with their tall, stately trunks, being the finest which many of the members of the Society had ever seen. Leaving the conveyances near the Gardwail Burn, the delegates walked by the side of the picturesque mountain torrent amidst typical Highland scenery to the Garawalt Falls, where the stream leaps over the rocks and rushes along with great force. Crossing the bridge to the other side of the stream, they reached the higher ground, from which a splendid view of the valley and of Balmoral Castle is obtained. Photographs were taken of several tall, thick, stately mountain Pines at this place, while other members found interest in inspecting the clumps of Cranberries, Blaeberrys, Crowberries, and mountain Heather. After a walk through the wood to the road, the party re-entered the conveyances and drove to Braemar, the Spruce and Larch-trees by the roadside being greatly admired. At Braemar luncheon was served in the Invercauld Arms and Fife Arms Hotels.

HADDO HOUSE.

Once again favoured with the most charming weather, Friday was devoted to inspecting the woods and policies of Haddo House, the Earl of Aberdeen's principal Scottish seat. Here much was found to admire; but of course in this bleak district—bleak in comparison with Deeside—the specimens of trees seen were not to be compared to the fine woods growing in the valley of the Dee. An item of interest imparted to the company by Mr. Smith, Lord Aberdeen's factor, to the effect that during the great storms of 1894 and 1900 some 160,000 trees were blown down on the Haddo House estate, created some surprise. The party were hospitably received.

The members were received cordially wherever they went, and expressed their great delight with all they saw during their stay in Aberdeenshire.

We understand the Scottish Arboricultural Society are to make Aberdeen their chief rendezvous during their next year's annual excursion.

READING HORTICULTURAL.

AUGUST 24.—In brilliant weather the annual summer exhibition of this Society was held in the Forbury Gardens, the keeping of which reflects great credit on Mr. G. Phippen, turf, borders, and beds being in the best condition. Unfortunately, owing to the restricted size of the patches of turf, a number of medium-sized tents have to be employed, which decreases the general effect. The exhibits were generally good, and the arrangements made by Mr. W. L. Walker (the Secretary), and Mr. J. Woodford (the Superintendent), excellent. The fruit and vegetables occupied a long, narrow tent placed over one of the main walks.

There were two classes for groups of plants. In the Open division Mr. D. H. EVANS, Shooter's Hill, Pangbourne (gr., Mr. Tugwood), was 1st with a tasteful arrangement of plants of good quality; and Mr. W. POLE ROUTH, Oakfield, Reading, 2nd.

In the Amateurs' division the Misses CRISP, Preston, Reading (gr., Mr. Durrant), were 1st; and Mr. W. J. BRAIN, Reading (gr., Mr. Froad), 2nd.

Mr. J. B. TAYLOR, Sherfield Manor, Basingstoke (gr., Mr. Wasley), was 1st in the Open division with four exotic Ferns, having fine examples of *Davallia filix-foemina* and *polyantha*, *Adiantum cardiolobum*, and *Woodwardia radicans*; Mr. H. WELCH-THORNTON, Beaurepaire Park, Basingstoke (gr., Mr. Leith), was 2nd, also with good specimens. In the Amateurs' division for the same number, Mr. R. MOSS, Blackwater (gr., Mr. Hunt), was 1st; and Mr. J. O. TAYLOR, Cravenhurst, Reading (gr., Mr. Ellis), 2nd.

Mr. J. B. TAYLOR had the best four specimen stove and greenhouse plants; Mr. H. WELCH, Thornton, was 2nd.

Some fine specimen *Fuchsias*, admirably grown and flowered, came from Mr. J. FREELANDER, White Knights Park (gr., Mr. Bright). Of dark varieties, he had Brilliant, Wiltshire Giant, and Elegance; light varieties, Mrs. Bright, Amy Lye, and White Queen—a very good selection. Mr. R. HEWETT, Reading (gr., Mr. Alexander), was 2nd. In the Amateurs' division, the best three were from Mrs. BLAND-GARLAND, Lower Redlands (gr., Mr. Wilson).

Some good double zonal Pelargoniums were shown, also Begonias.

Cut flowers were remarkably good. Mr. JOHN WALKER, Thane, won the 1st prize for twenty-four Dahlias, showing good blooms; Mr. J. R. TRANTER, Henley, was 2nd.

Messrs. J. CHEAL & SONS, Crawley, won the 1st prize with twelve blooms of fancy Dahlias, and also for twelve bunches of single Dahlias; Mr. J. WALKER was 2nd, both showing in excellent character.

For twelve Cactus Dahlias, three blooms of each, Mr. J. WALKER was 1st with very good blooms; Mr. L. McKENNA, Honeys, Twyford (gr., Mr. Nye), was a close 2nd; Mr. W. BAXTER, nurseryman, Woking, being 3rd. With twelve bunches of Pompons, Mr. C. TURNER came 1st with model blooms; Mr. J. WALKER was 2nd, and Messrs. J. CHEAL & SONS, 3rd.

With eighteen blooms of Roses, Messrs. J. JEFFERIES & SONS, Cirencester, came 1st, and Mr. GEO. PRINCE, Longworth, 2nd, both with good late-summer flowers. Mr. TRANTER, Henley, had the best twelve blooms. Mr. JOHN WALKER took the 1st prize with twelve spikes of Gladioli; Mr. W. C. BULL, Ramsgate, was 2nd. The best nine vases of Sweet Peas came from Mr. L. McKENNA.

In the Amateurs' division cut flowers were generally well exhibited: Mr. J. B. FORTESCUE, Drogheda (gr., Mr. Page), was 1st with six Roses, and Mr. D. H. EVANS, 2nd. Mr. J. B. TAYLOR came 1st with six pretty vases of cut flowers; Mrs. P. HAMRO, Sedgell (gr., Mr. Smith), was 2nd. Mrs. HAMRO was 1st with six blooms of show Dahlias; Mr. H. A. NEEDS, Woking, with six Cactus varieties; Mr. R. MOSS with six bunches of single, and Mr. C. WALKER, Reading, with six bunches of Pompon varieties. Sweet Peas and Gladioli were also shown.

Mr. L. McKENNA came 1st with six vases of Cactus Dahlias, very nicely staged; Mr. H. A. NEEDS won the 1st prize with twelve excellent blooms of Cactus Dahlias on boards. The prizes in the two foregoing classes were offered by Messrs. Cheal. Mr. H. W. DUNLOP, Earley (gr., Mr. Giles), was a close 2nd.

Messrs. R. H. BATH, Ltd., Wisbech, offered special prizes for twelve bunches of Cactus Dahlias; Mr. J. WALTER was 1st with good blooms.

FRUIT AND VEGETABLES.—The best six dishes of fruit came from Mr. J. B. TAYLOR, Mr. WASLEY staging good Muscat of Alexandria and Madresfield Court Grapes, Barrington Peaches, Pineapple Nectarine, Plums and Melons, 2nd. Mr. C. T. D. CREWS, Billingbear Park (gr., Mr. Ashman), who had Black Hamburgh and White Muscat Grapes, Nectarines, Apricots, Figs, and Melon.

Mr. ASHMAN was 1st with three excellent bunches of Black Hamburgh Grapes. The Earl of CARNARVON (gr., Mr. Pope) was 2nd. With two bunches of any other black variety, Mr. WASLEY was 1st with Madresfield Court; Colonel BASKERVILLE, Crouslay Park (gr., Mr. Tubb), was 2nd with Alicante. With three bunches of white Grapes, Mr. C. E. KEYSER, Aldermaston Court (gr., Mr. Galt), was 1st; and Mr. TUBB 2nd, both with Muscat of Alexandria.

Some good Peaches were shown by Mr. G. A. INGLEFIELD, Andover, who took the 1st prize with six fruits. Mr. A. F. WALTER, Bearwood (gr., Mr. Barnes), was 1st with the same number of Nectarines.

Mr. BOWERMAN, The Gardens, Hackwood Park, was 1st with three dishes of Plums, having Oullin's Golden Gage, Imperial, and Washington; Mr. WASLEY was 2nd, with Angelina Burdett in the place of Imperial.

Mr. WILL TAYLER, The Nurseries, Hampton, took the 1st prize with three dishes of dessert Apples.

Mr. BOWERMAN was 1st with three dishes of culinary Apples.

Mr. W. B. MONCK, Coley Park (gr., Mr. Booker), was 1st with three dishes of dessert Pears. Melons were numerous. Cucumbers and Tomatoes were in good character.

The special prizes for vegetables offered by Messrs. Sutton & Sons and Messrs. J. K. King & Sons brought excellent competitions and very fine vegetables, and in all the dozen or so classes very good quality prevailed.

Several miscellaneous exhibits not for competition were staged. Foremost was a series of illustrations in floral decorations from Mrs. PHIPPEN, Court Florist, Reading, all of the best quality; Gladioli from Mr. W. C. BULL, of Ramsgate; Roses from Mr. GEO. PRINCE, Longworth; plants, &c., from Mr. HOLDEN, Church Road, Ereleigh; and Roses from Mr. W. TAYLER, Hampton.

DUMFRIESSHIRE AND GALLOWAY HORTICULTURAL.

AUGUST 26, 27.—This Society held its annual show in large marquees at Cresswell Park, Dumfries, on the above dates. The show was the largest and best ever held in the South of Scotland, surpassing in extent that of the Jubilee of the Society, hitherto considered the finest held since the inception of the Society in 1862. A feature of the show was the non-competitive exhibits of the nurserymen, who showed in unusual numbers. Mention may be made of the exhibit of Messrs. Dobbie & Co., Rothesay, which was much admired; that of Messrs. James Service & Sons, Dumfries; that of Messrs. Little & Ballantyne, Carlisle; and those of Messrs. T. Kennedy & Co., Dumfries; Mr. James Kennedy, Dumfries; and Fotheringham & King, Dumfries; while Roses were admirably exhibited by Messrs. Palmer & Son, Ltd., Annan, and Messrs. T. Smith & Sons, Stranraer. Three tables entered for the Burgh of Dumfries Challenge Cup, with a money prize added, and the Trophy was ultimately awarded to Messrs. James Service & Sons for a tastefully-arranged table of good plants. Mr. J. M. Stewart, Mollance, was 2nd with a skilfully arranged table, which some preferred to that of Messrs. Service.

The class for a circular group of plants brought out two competitors, Mr. W. Muir, gr. to Mr. Jas. Davidson, Summerville, being 1st, closely followed by Mr. C. Melver, gr. to Mrs. Young, Liddellullen.

The class for table decorations created much interest, seven competitors showing some charming decorations. The 1st prize was won by Miss Pulford, Netherwood Bank; the 2nd by Miss L. Rutherford, Crichton House.

The various florists' classes were well contested, the leading winners being Mr. Jas. Kerr, Mr. W. Byers, W. Middleton & Son, and Mr. J. Henderson, Elmbank.

Roses were good for the season, Messrs. Palmer & Son being 1st for twenty-four in the open class; Mr. K. Mackenzie, Conneath, being 1st for Teas.

Herbaceous flowers were excellent, Messrs. T. Kennedy & Co., W. Middleton & Son, and Mr. K. Mackenzie, being among the leading prize-winners.

Pot plants were the weakest section in the show, Mr. J. M. Stewart being the leading winner. Cut flowers were remarkably good in the gardeners' classes, and this, formerly one of the weakest sections, was really highly creditable. Sweet Peas were a strong class, Mr. J. Duff, gr. to Col. Gordon, Threave, being 1st, and the other classes were well competed and the prizes well distributed. Mr. J. M. Stewart, Mr. J. Duff, Mr. J. Austin, Hardgate; Mr. R. A. Austin, Mainsridge; Mr. R. A. Grigor, Dalswinton; Mr. D. Whitelaw, Lochbarbriggs, and others being among the prize-winners.

FRUIT was considerably better represented than last year, and Grapes were well shown. The 1st prizes in these were won by Mr. J. M. Stewart, Mr. J. Henderson, Mr. W. Thomson, Cally; Mr. J. Duff, and Mr. R. A. Grigor. Mr. J. M. Stewart led in the Apple and Pear classes. Peaches were capital, Mr. W. Currie, Drumlyer, leading with these.

The competition with VEGETABLES was very keen, some classes having as many as fifteen entries. Leading exhibitors in these were Mr. J. Duff (who had the best collection), Mr. K. Mackenzie, Mr. R. Young, Gracefield; Mr. C. Melver, Mr. R. A. Grigor, Mr. W. Dickson, Mr. J. Henderson, Mr. J. M. Stewart, Mr. J. Duff, Mr. R. Stobo, Marchmont, and Mr. E. Rutherford, Glenlair.

It is to be regretted that the attendance of the public was not encouraging to the management, nor commensurate with the fine display of horticultural produce.

GARDENERS' DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.—The members of the above Society recently held two enjoyable outings. The first was to Tynley Hall, Winchfield, by kind permission of Mr. and Mrs. Lionel Phillips. The party journeyed from Reading by brakes, and on arrival were received by Mr. Foster, the head gardener. After luncheon the members inspected the glass-houses, twenty in all, the flower-gardens, the pleasure-grounds, Lily-ponds, and the "Italian" garden. The fruit-trees in pots claimed special attention. The whole of the buildings connected with the garden have been erected on the most approved style regardless of expense. A vote of thanks proposed by the President to Mr. and Mrs. Phillips for their kindness was unanimously carried. The second visit was to Wokefield Park, the residence of Mr. and Mrs. Alfred Palmer, who conducted the party to the "terrace" garden, the greenhouses, the corridor, vineries, and Peach-houses, which were all in excellent condition. The feelings of the members were suitably expressed by Mr. Arthur W. Sutton in proposing a hearty vote of thanks to Mr. and Mrs. Palmer for their kindness.

CROYDON AND DISTRICT HORTICULTURAL.—On Wednesday, August 21, the members visited the gardens of Mr. J. P. Morgan, Dover House, Roehampton. The visitors were taken through the range of greenhouses, and several features were noticed and commented on. The principal interest was centred on the Carnations out of doors and in frames. In the afternoon a representative eleven from the society played a friendly cricket match with an eleven from the garden staff, the visitors scoring 39 runs against the home team's 116 in the first innings. Tea was served in the cricket field.

BRISTOL AND DISTRICT GARDENERS'.—The monthly meeting was held at St. John's Rooms on the 25th ult. Mr. P. Garnish in the chair. Mr. Sease, gardener to Henry Derham, Esq., Sneyd Park, gave a lecture on "Tomatoes." He described the best method of cultivation, including the mixing of soils, the maintenance of a suitable atmosphere, feeding, &c. The common diseases were also discussed. A discussion followed, during which the lecturer was asked several questions, all of which were answered. Prizes for a dish of Tomatoes were awarded to Mr. COLMAN (gr., Mr. Spry), Mr. A. BAKER (gr., Mr. Orchard), and Mr. FRANCIS TAGART (gr., Mr. Binfield).

REIGATE, REDHILL, AND DISTRICT GARDENERS'.—The annual outing took place recently, the place selected being Messrs. Sutton & Sons' nursery at Reading. About eighty members availed themselves of the opportunity of looking over this world-famed seed establishment. On arriving at Reading about 2 p.m. they were met by Messrs. Cox and Dean on behalf of Messrs. Sutton & Sons. The visitors were conducted to the trial grounds and glass department, where a very careful inspection was made, after which the whole party were entertained at a meat tea provided by Messrs. Sutton.

SCHEDULES RECEIVED.

NORTH MIDDLESEX DAHLIA AND HORTICULTURAL SOCIETY'S Annual Exhibition to be held in the Alexandra Palace, on Wednesday and Thursday, September 7 and 8, 1904.

MARKETS.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6 0-12 0		Euonymus, vars.,		
Arbor Vita, per			per dozen	4 0-10 0	
doz.	9 0-18 0		Ferns in var.,		
Aspidistras, per			dozen	4 0-8 0	
doz.	18 0-36 0		Ficus elastica, per		
Asters, doz. pots	3 0-4 0		dozen	9 0-24 0	
Aucubas, per doz.	4 0-8 0		Fuchsias, per doz.	2 0-4 0	
Australian Bush			Hydrangeas, doz.	12 0-18 0	
Ferns, dozen	10 0-12 0		Lilium speciosum		
per box	2 6-4 0		rubrum, per		
Balsams, dozen...	2 0-3 0		dozen	8 0-10 0	
Begonias, per doz.	6 0-8 0		Lycopodiums, per		
Campanulas	3 0-4 0		dozen	3 0-4 0	
Cannas	4 0-6 0		Palms, variety		
Chrysanthemums,			each	3 0-20 0	
per dozen	3 0-4 0		Pteris tremula, p.		
Cocos	12 0-18 0		dozen	4 0-8 0	
Crotons, per doz.	12 0-24 0		Tropaeolum, per		
Cyperus, per doz.	3 0-4 0		dozen	3 0-4 0	
Dracaenas, variety,			Verbena, per		
dozen	6 0-18 0		dozen	4 0-6 0	

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alströméria, per			Lilium lanci-		
dozen bunches	3 0-4 0		folium	1 0-2 6	
Asters, per doz...	2 0-6 0		Lily of the Valley	12 0-15 0	
Bouvardias, doz.	4 0-6 0		Lobelia cardua-		
Cape Gooseberry,			lis, per dozen	3 0-4 0	
per doz. bunch.	6 0-8 0		Nallow, per doz.	2 0-3 0	
Carnations, doz.			Marguerites, yel-		
bunches	9 0-18 0		low, 12 bunches	0 9-1 6	
Chrysanthemums,			Marguerites, white,		
dozen bunches	6 0-9 0		dozen bunches	2 0-4 0	
Coreopsis, p. doz.	0 6-1 0		Orchids, various,		
Cornflower	0 9-1 0		per dozen	2 0-8 0	
Dahlias, per doz.	3 0-6 0		— Cattleyas	6 0-12 0	
Eucharis, doz.	2 0-3 0		Pelargoniums,		
Ferns, Asparagus,			zonal, dozen		
per bunch	0 6-1 6		bunches	3 0-6 0	
Freche, 12 bun.	0 3-0 4		— white, dozen		
— Maidenhair,			bunches	4 0-6 0	
doz. bunches	4 0-6 0		— double scarlet,		
Gaillardias, doz.	0 9-1 0		per doz. bun.	2 0-4 0	
Gardenias, box	1 0-2 0		Phlox	3 0-4 0	
Gypsophila, doz.			Pyrethrum, per		
bunches	2 0-4 0		doz. bunches	2 0-3 0	
Gladiolus, white,			Roses, Mermet,		
doz. bunches	3 0-5 0		per bunch	1 0-2 0	
— various, doz.			— white, bunch	1 0-2 0	
bunches	3 0-6 0		— pink, bunch	1 0-3 0	
red, per doz.			— red, bunch	0 4-1 0	
spikes	1 0-3 0		— Safranos, per		
— dozen bun.	2 0-3 0		bunch	1 0-1 6	
Golden Rod, doz.	3 0-4 0		Smilax, 12 bunch.	1 6-3 0	
Heather, Scotch,			Statice, 12 bunches	3 0-6 0	
per bunch	0 6-0 8		Stephanotis	1 0-2 0	
Honesty, bunch	1 0-1 0		Stocks, 12 bunches	2 0-4 0	
Lavender	2 0-4 0		Sunflowers	2 0-4 0	
Lilium auratum			Tuberose on		
per bunch	1 6-3 0		stem, bunch	0 9-1 0	
— flaristii, per			— short, p. doz.	0 2-0 4	
bunch	3 0-4 0				

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe,			Mushrooms (house)		
per dozen	4 0-6 0		per lb.	0 9-1 0	
Beans, dwarf, per			Onions, green,		
sieve	5 0-10 0		doz. bunches	2 0-2 6	
— Scarlet Runners,			— per bag	4 0-1 6	
per bushel	5 0-5 6		— per case	5 6-10 0	
Beetroots, bushel	1 6-2 0		Parsley, doz. bun.	1 0-2 0	
Cabbages, tally	1 6-2 6		— sieve	0 6-1 0	
Carrots, per doz.			Pears, per bushel	5 0-10 0	
bunches	0 9-2 0		Potatoes, per ton	60 0-90 0	
— bag	2 6-3 6		Radishes, per		
Cauliflowers, per			dozen bunches	0 9-1 0	
dozen	1 6-2 0		Salad, small, pun-		
Celery, per dozen			nets, per doz...	0 9-10 0	
bunches	15 0-20 0		Shallots, sieve	3 0-10 0	
Cress, doz. pun.	0 9-1 0		— Sieve	1 0-10 0	
Cucumbers, doz.	1 6-2 6		Tomatoes, Chan-		
Endive, per doz.	1 9-2 0		nel Islands,		
Garlic, per lb.	0 23-30		per lb.	0 2-10 0	
Horseradish, fo-			— English, doz.	2 0-3 0	
reign, p. bunch	1 0-1 2		Turnips, new, doz.	1 0-2 0	
Leeks, 12 bundles	1 0-1 3		— bag	3 0-10 0	
Lettuces, Cabbage,			Vegetable Mar-		
per dozen	1 0-1 6		rows, per doz.	0 9-1 6	
— Cos, per doz.	1 0-1 9		Watercress, per		
Mint, doz.	2 0-10 0		dozen bunches	0 3-0 6	

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, bushel	1 0-2 6		Grapes, Gros Col-		
— English, sieve			mar, per lb...	0 10-1 6	
or half bus.	1 0-2 0		— Alicante, per		
Bananas, bunch	6 0-10 0		lb.	0 8-1 3 0	
— loose, dozen	1 0-1 6		Lemons, per case	8 0-25 6	
Blackberries, peck	2 0-3 0		Melons, each	0 6-1 0	
Cobnuts, per lb.	0 23-30		Nectarines, A, per		
Figs, per doz.	1 0-4 0		dozen	6 0-10 0	
Filberts, per lb.	0 20-23		— B, per doz.	1 6-3 0	
Grapes, Hambro'			Oranges, per case	10 0-12 0	
A, per lb.	1 6-2 0		Peaches, A, per		
B, per lb.	0 4-1 0		doz.	8 0-12 0	
— Gros Maroc, lb.	0 9-1 3		— B	1 6-3 0	
— Muscat A, lb.	2 0-3 0		Pears, per sieve...	1 6-3 0	
B, per lb.	0 8-1 3		Pines, each	2 6-4 0	

REMARKS.—The prizes for Plums are now much lower, the average prices per sieve being for Downshire 1s. 9s. to 2s.; Gages, 2s. 6d. to 3s. 6d.; Victorias, 1s. 3d. to 2s.; Diamonds, 1s. 6d. to 1s. 9d. The best cooking Apples realise 2s. 6d. per bushel; Quarrendens and Worcester Pearmain 2s. per sieve, or 1s. per bushel. Blackberries are arriving in the market in quantity; average price, 2d. per lb.; "William" Pears, 2s. to 2s. 6d. per sieve.

Hessle, 2s. 6d. to 3s. per bushel. Peas are practically over. Out-door Mushrooms, 3d., 4d., or 5d. per lb., according to sample; Corn-cobs, 1s. per doz.; Grape fruits, 18s. per case. The Oranges quoted above are from Jamaica.

POTATOS.

Various, home-grown, 65s. to 90s. per ton, John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

THE market presents a very desolate appearance, and persons accustomed to visiting it only in the busy spring season would be surprised to find so great a difference. Chrysanthemums are the most important feature, of which good flowering plants are now coming in. The best white variety, Lady Fitzwigram, in 6in. pots, with eight or nine good flowers on each, make 24s. per dozen. The same grower (Mr. H. Billingshurst, of South Norwood) also has the Madame Masse varieties in white, pink, yellow, and bronze. The plants, dwarf and well-flowered, have been grown in pots, and fetch from 12s. to 18s. per dozen. Asters are very prominent and remarkably good this season. Solanums do not sell well, although covered with ripe berries; the plants are rather small. A few good white Marguerites are still seen, and this morning I noticed quite a lot of excellent plants of Zinnia elegans flore pleno. Campanula isophylla alba is plentiful, and some very good plants of Campanula Balcanica are present, but this is prettier as a foliage plant early in the summer, before it begins to flower. Pelargoniums of all sections are now past, but we expect some good Zonals again later on. Lilies are again very abundant, especially L. laucofolium, rubrum, and album. There are a few good Auratums. Longiflorums are also good. The main supply of Verbenas is now over, but there are still a few good plants of the variety Miss Willmott, and I noted a few good bushy well-flowered plants of yellow Calceolarias rather out of season, but very good. Most foliage plants are plentiful. Aralia Sieboldi is very good in 4s's and 3s's. The imported plants of Dracaena Brantii are good. The variegated Aspidistras maintain a good price. Ficus elastica is much cheaper than it was formerly. Palms have also a tendency to fall in price. Codieums (Crotons) in well-coloured plants may be had at low prices. In Ferns there are now some nice collections of choice sorts in 6-size pots, which include such varieties as Adiantum trapeziforme, Gymnogramma chrysophylla, Pteris tricolor, Asplenium lucidum, and other good things, which are sold at about 1s. per doz. Asplenium nidus is very fine in all sizes; good Adiantums are plentiful. Of Montbretias, Rayon d'Or is a good yellow, and Germania the best of the darker shades. Roses are now on the wane, but some fairly good blooms are seen; Perle des Jardins, C. Mermet, Bridesmaid, Madame A. Chateau, Niphotos, Sunrise, and of the plunks from the open, Mrs. J. Laing and La France; General Jacqueminot also continue, but the flowers are small. The autumn Cattleyas are now coming in, but the trade for them is very uncertain. Stephanotis, Gardenias, and Eucharis are good, also Lily of the Valley, Tuberoses, and Lilies laucofolium album and roseum.

CUT FLOWERS.

Chrysanthemums increase in quantity. The yellow Madame Desgranges is very good; of whites, Lady Fitzwigram is the best. Goacher's Crimson quite super-seded Harvest Home; Nellie Blake is another good red variety. Asters are seen in large quantities, but large blooms are not over plentiful. The best market varieties are those of the "Comet" section, the white being particularly appreciated. Gaillardias are plentiful, also Calliopis grandiflora (or C. lanceolata), which is one of the prettiest yellow flowers for light floral arrangements. Yellow Marguerites (English grown) are very good, although in excess of the demand. A few Sweet Peas are still seen. Dahlias are prominent. Carnations are fairly plentiful, but the blooms are not quite so good as they were a little earlier in the season. Statice Gmelini and S. latifolia are very plentiful; also Gypsophila paniculata; G. elegans, the annual, is still marketed in large quantities. Iceland Poppies still hold out. All kinds of foliage and cut Fern continue plentiful. A. H., Covent Garden, August 27.

FRUITS AND VEGETABLES.

GLASGOW, August 31.—The following are the averages of the prices during the past week:—Gages, 4s. to 6s. per half sieve; Plums, 4s. 6d. do.; common, 1s. 6d. to 2s. 6d.; Melons, 24s. 5s. 6d. to 6s. 6d. per case; do., 36s. 6s. 6d. to 7s. 6d. do.; Lemons, 8s. to 10s. per barrel; Grapes, Almeria, 11s. to 17s. per barrel; do., home, 9d. to 1s. per lb.; Apples, American, 12s. to 16s. per barrel; English do., 8s. to 12s. per cwt.; Bananas, 5s. 6d. to 11s. per bunch; Currants, black, 4d. and 6d. per lb.; do., red, 3d. to 4d. do.; Tomatoes, 4d. to 5d. per lb. In Scotch fruit, Greengages made 14s. to 16s. per cwt.; Blue Plums, 7s. do.; Gisborne do., 5s. 6d., and Cherry do., 8s. and 9s. do.; Pears made 2s. to 2s. 6d. per sieve; Apples, 8s. per hamper, and 1s. 9d. to 2s. per sieve, also 10s. per cask; Shallots, 8s. per cwt.

LIVERPOOL, August 31.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatoes, per cwt., Early Regents, 3s. 8d. to 5s. 4d.; Kidneys, 3s. to 4s. 3d.; British Queen, 2s. 9d. to 3s. 6d.; Conquest, 2s. 8d.

to 3s. 4d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 6d. to 2s. per cwt.; Carrots, 6d. to 10d. per dozen bunches; Cucumbers, 1s. 6d. to 2s. per dozen; Onions, foreign, 3s. 6d. to 4s. 1d. per bag; Parsley, 6d. to 8d. per dozen bunches; Lettuces, 6d. to 10d. per dozen; Cauliflowers, 10d. to 2s. per dozen; Cabbages, 6d. to 9d. do.; Celery, 1s. 6d. to 2s. do.; Peas, 6d. to 7s. 6d. per hamper; Beans, 2s. 6d. to 3s. do.; do., Kidney, 8d. to 10d. per peck. Fruit: Melons, Valencia, 24s. 3s. 9d. to 4s. 3d.; 36s. 4s. 6d. to 5s.; Grapes, black Lisbons, 5s. to 6s. per box; Almerias, 3s. to 5s. 6d. per barrel; superior do., 6s. 6d. to 9s. do.; a few lots at 12s. to 13s.; Oranges, Brazilian, 4s. 6d. to 9s. per box; Naples, 9s. to 12s.; Tomatoes, Lisbon, 4s. 3d. to 5s. 6d. per box; Apples, Lisbon, 2s. 6d. to 4s. per box; do. Oporto, 1s. to 5s. 9d. do.; Lemons, Palermo, 5s. to 7s. per case, and 2s. 6d. to 3s. 6d. per box. St. Johns.—Potatoes, 10d. to 1s. per peck; Cucumbers, 3d. to 6d. each; Filberts, 8d. per lb.; Apricots, 1s. per dozen; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pine-apples, foreign, 3s. to 5s. each; Mushrooms, 8d. to 1s. per lb. Birkenhead.—Potatoes, 10d. to 1s. 2d. per peck; Cucumbers, 1s. to 3s. per dozen; Filberts, 6d. to 8d. per lb.; Gooseberries, 3d. do.; Peas, 1s. to 1s. 4d. per peck; Grapes, English, 3d. to 2s. per lb.; do., foreign, 3d. to 6d. do.; Tomatoes, English, 2d. to 6d. do.; Mushrooms, 8d. to 1s. do.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending August 27, 1904.

1904.		TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.		TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.
AUGUST 21 TO AUGUST 27.		AT 9 A.M.		DAY.		NIGHT.		LOWEST TEMPERATURE ON GRASS.				
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.	At 1-foot deep.						
						At 2-feet deep.						
MEANS		deg.	deg.	deg.	deg.	deg.	At 4-feet deep.			ins.	hr. min.	
		58	55	67	47	41	deg.	deg.	deg.			
		60	61	60	0.09	6	25					

Remarks.—There was a slight thunderstorm on August 22.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 27, is furnished from the Meteorological Office:—

"The weather during this week was unsettled very generally, rain falling on several days, and thunderstorms occurring in many localities over the eastern and northern counties of England between the 21st and 23rd, and at a few north-western stations on the 24th.

"The temperature was considerably below the mean, the deficit amounting to between 3° or 4° in most districts, and to as many as 5° in the Midland Counties and England, N.W. The highest of the maxima were recorded on the 27th, and ranged from 75° in England, S., and 73° in the Midland Counties and England, S.W., to 65° in Scotland, W. The lowest of the minima, which were nearly all registered on the 25th, were as low as 32° in Scotland, N., and 33° in Scotland, E. (at Lairg and Nairn), while elsewhere they varied from 36° in England, S., the Midland Counties, and England, N.W., to 40° in England, E. and S.W., and Ireland, N., and to 50° in the Channel Islands.

"The rainfall was more than the mean over England, but rather less in Ireland, Scotland, and the Channel Islands.

"The bright sunshine was deficient in all parts of the Kingdom, except Scotland, N., and England, E. and S. The percentage of the possible duration ranged from 47 and 45 respectively in England, S. and E., to 29 in England, N.E., 27 in Ireland, N., 23 in England, N.W., and to 21 in Scotland, W."

THE WEATHER IN WEST HERTS.

Thirteen consecutive cold nights.—The recent cold period, which came to an end on August 25, lasted fifteen days. During that time there did not occur a single unseasonably warm day, and but three warm nights, while on four nights the thermometer exposed on the lawn indicated readings within four degrees of the freezing-point. The last three days, on the other hand, have been very warm, the highest reading in the thermometer screen on each of them rising to or above 77°. The nights however still remain cold for the time of year, in fact, the last thirteen nights have all been more or less unseasonably cold. Both at 1 foot and 2 feet deep the ground is now slightly warmer than is seasonable. Some rain fell on two days during the week, but the

amount deposited on each of the days was only sufficient to wet the surface of the ground. No measurable quantity of rain-water has now come through the bare soil percolation gauge for more than a week. The sun shone on an average for eight and a half hours a day, or for two and a half hours a day in excess of the mean daily duration for August. Calms and light airs again prevailed, the direction of these light airs being very variable. The mean amount of moisture in the air at 3 p.m. was about six per cent. below a seasonable quantity. E. M., Berkhamstead, August 31, 1904.

GARDENING APPOINTMENTS.

MR. W. H. VEE, for the past thirteen years Gardener to W. H. STEWART, Esq., Milnthorpe House, Sandil, Wakefield, as Gardener to His Honour Judge CADREAU, Rhydding House, Aekworth, Pontefract.

MR. T. ROBERTS, for the past six years General Foreman at The Firs, Malvern, Worcestershire, formerly Foreman at Wrotham Park, Barnet, Herts, as Gardener to G. L. LOPES, Esq., Northleigh, Bradford-on-Avon, Wilts.

MR. M. W. COOPER, for the past five years General Foreman in the Gardens, Worsley Hall, Manchester, previously General Foreman at Luton Hoo, as Gardener to the Earl of ELLESMERE, Stetchworth Park, Newmarket.

MR. JOHN TURTON, Stockeld Park Gardens, Wetherby, late of Becca Hall, Aberford, has been appointed Gardener to Col. GASCOIGNE, of Lotherton Park, Aberford. His duties to date from the first week in September.

MR. F. MILSON, Gardener to F. G. GLEDSTANES, Esq., of Old Manor House, Gunnersbury Lane, W., as Gardener to the same Gentleman at Berry Hill, Taplow.

MR. J. TUCKER, for upwards of twelve years Gardener at the City Asylum, Birmingham, has been appointed by the same Committee to lay out the Grounds of their New Asylum at Hollymoor, near Birmingham.

MR. A. PARRY, late of Anglem, Cathedral Road, Cardiff, as Gardener to Col. J. A. BRADNEY, Taly-Coed Court, near Monmouth.

MR. THOMAS IRELAND, late Head Gardener, Bank Dale, Bromborough, has been appointed Gardener to Lady CHELMSIDE, Newstead Abbey, Notts, and entered on his duties August 10.

MR. F. BENNETT, for the past six years Gardener to Colonel BAIRD, Ewing House, Newmarket, has been appointed Gardener to J. DE PASS, Esq., Middleton Hall, Lynn, Norfolk, the appointment dating from July 28.

MR. A. SMIT, for the past four and a half years Gardener to Col. P. T. H. TAYLOR, Newton Priory, Tetbury, as Gardener to JAMES V. GODSELL, Esq., Stratford Court, Stroud.

MR. S. CARON, for over three years as Foreman at Elvetham Park Gardens, Windfield, Hants, has been appointed Gardener to Lieut.-Gen. the Hon. SOMERSET GOUCH CALTHORPE, at Woodlands Vale, Ryde, Isle of Wight. Commences duties September 2.

MR. A. J. PITMAN, late Gardener to F. G. VINCENT, Esq., The Pines, Beckenham, as Gardener to F. WALTERS, Esq., Vodin, Pyrford, Woking, Surrey.

MR. G. ALLEN, for four years Gardener at Hasebeck Hall, Northampton, as Gardener to J. A. LEVY, Esq., The Mount, Maidenhead.

MR. HENRY GRAY, for the last ten months Gardener to the late MAJOR H. FOSS, Esq., Woldingham, Surrey, as Gardener to S. BOUTLER, Esq., Garston Park, Godstone, Surrey.

MR. WILLIAM EARR, for the past six and a half years Gardener at Woodlands Vale, Ryde, as Gardener to Col. J. R. P. GOODDEN, Compton House, Sherborne, Dorset.

MR. A. WEATHER, late Gardener at Crosley Cote, North-lyerton, and Smelt House, Howden-le-Wear, Durham, as Gardener to Mrs. WORMALD, Acomb Hall, Acomb, York.

CATALOGUES RECEIVED.

BULBS.

W. CUTBUSH & SON, Highgate, N.—Bulbs.

B. S. WILLIAMS & SONS, Upper Holloway, London, N.—Bulbs.

HOGG & ROBERTSON, 22, Mary Street, Dublin, Ireland—Bulbs.

WILLIAM LAING, Sutton, Surrey—Bulbs.

W. BULL & SONS, Chelsea, London—Bulbs, &c.

R. SYDENHAM, Tenby Street, Birmingham—Bulbs.

BROWN & WILSON, 10, Market Place, Manchester—Bulbs.

A. F. UPSTONE, 35, Church Street, Rotherham—Plants and Bulbs.

FISHER, SON & SIBRAY, Ltd., Royal Nurseries, Handsworth, Sheffield—Bulbs.

SUTTON'S, Reading—Bulbs.

JAMES VEITCH & SONS, Ltd., Royal Exotic Nursery, Chelsea—Bulbs.

E. P. DIXON & SONS, Hull—Bulbs.

SAMUEL DOBIE & SON, Heathfield Gardens, Chester—Bulbs.

J. MURRAY & SONS, 103, High Street, Deptford, London—Bulbs.

DICKSONS, 1, Waterloo Place, Edinburgh—Bulbs, &c.

WILLS & SARGAR, Royal Exotic Nursery, South Kensington—Bulbs.

WM. PAUL & SONS, Waltham Cross, Herts—Bulbs.

R. H. BATH, Ltd., The Floral Farms, Wisbech—Bulbs and Plants.

CLARK, BROTHERS & CO., 65 Scotch Street, Carlisle—Bulbs and Plants.

W. SHAND & SONS, New Street, Lancaster—Bulbs.

DICKSON & ROBINSON, Cathedral Street, Manchester—Bulbs, &c.

FRANK DICKS & CO., 68, Deansgate, Manchester—Bulbs and Plants.

ENQUIRIES.

CEREUS TRIANGULARIS.—1. At what age does *Cereus triangularis* fruit? 2. Is the fruit grown in England eatable? 3. Would it pay for market growers (Channel Islands) to grow the plant for producing fruit? [More than doubtful. Ed.]

WHAT are the chemicals used in the manufacture of a "brick" burnt on the Californian fruit plantations, and in what proportion are the ingredients used? I have been informed that the so-called bricks are placed individually at intervals, and that after being lighted they burn for eight hours without attention. My informant said they caused a very dense smoke, were non-injurious to trees, were fatal to all insect pests, and were a good preventive from frost. *Constant Reader*.

ANSWERS TO CORRESPONDENTS.

ASTER WILT: *J. R. P.* The wilted Asters sent exhibit no sign of the Aster worm, nor any perceptible trace of fungoid disease. The cause of their going off cannot be found in the plants themselves. We are reminded that in 1901 there were grave complaints in the United States (U.S.A., Exp. Stn. Hatch reports, 12 and 13) of the trouble of growing Asters on account of disease. The most prominent was one of obscure nature, which experiments indicated to be due to a disturbance of the assimilative functions of the plant. This has great resemblance to the case before us. Three other fungoid diseases are alluded to, but none of these can be traced in connection with the present disease. *M. C. C.*

BEGONIAS: *G. H.* Certainly the old tubers will be affected. Tobacco-water is the best remedy to apply.

BOOK: *A. H. S.* The number has been mislaid. Apply to Mr. W. T. Macoun, Botanic Gardens, Ottawa, who can probably furnish you with the address.—*J. B.* *British Trees*, by Hon. Stanhope Tolemache (Sampson Low, Marston, & Co.); good illustrations. *Trees and Shrubs for English Gardens*, by E. T. Cook (Country Life Office). *Beautiful Flowering Trees and Shrubs*, by John Weathers (Simpkin, Marshall & Co.); coloured figures.

CLUB IN BRASSICAS: *A. H., Wimbledon.* It has been proved that young Brassica plants are most susceptible to the attacks of the slime-fungus (*Plasmidiophora brassicæ*) during the first three weeks after the plants have germinated from the seeds. Every precaution should therefore be taken to ensure that the soil of the seed-beds is free from contagion. Quicklime is the best cure, and in bad cases it has been applied at the rate of 75 bushels to the acre of ground with good results. All this is described, and illustrations of "Club-root" are given, in the *Calendar of Garden Operations*, obtainable from our Publishing Department, price 7½d., post free.

CRICKET GROUND: *A. W.* The top-dressing will not be likely to kill the Clover. The only thing you can do is to apply freely nitrogenous manures that will encourage the grasses to outgrow the Clover.

CROSSING OF BEGONIAS: *J. R.* Remove all the male flowers from the plant you wish to pollinate, then take a camel's-hair brush, and with it take the pollen from a male flower of another plant, and transfer such pollen to the stigma of one of the female flowers. It is better to do this before the female flower is fully open, and to remove with a finely-pointed pair of scissors one of the flower segments. The female flowers of Begonias may be easily distinguished from the male flowers because they possess an ovary at the base of the flower. You could not do better than procure *Plant Breeding* (Bailey) from the Publisher of this journal.

CYPRESSES: *G. H. & Sons.* "Benthami," uncertain; "torulosa Corneyana," probably correct; "Knightiana," correct; "Knightiana chamaecyparissoides" is Corneyana; "Benthami arizonica," doubtful—we do not think it is arizonica; "Goveniana," correct; "torulosa majestica," correct; "ambigua" is Corneyana.

It is excessively difficult to name Cypresses owing to their great variability.

DISEASED APPLE-LEAVES: *REV. G. H. E.* The spots on the leaves appear to be those of *Septoria pyricola*, but are absolutely barren, and in the absence of sporules cannot be positively identified. It would seem, however, by the appearance, that the development of the fungus has been checked by the application of ammoniated copper carbonate, and the formation of fruit prevented. Hence the means for its dispersion have been destroyed, and although nothing more can be done this year, it is highly probable that with spraying in the spring about once a week with a diluted copper solution, the disease would not reappear, or in a very modified form. A few of the leaves exhibit the work of the larvæ of a mining leaf insect. *M. C. C.*

FERN: *C. B. C.* Your plants are badly infested with thrip and red-spider. Treat them moderately with a vaporiser, remembering that Ferns may be very easily injured by tobacco fumes.

FOUNTAINS: *J. W.* We believe there are fountains to be obtained, by the use of which the supply of water is used over and over again. Apply to the makers of garden implements, or advertise.

FRUIT-GROWING: *H. O'B.* As you have everything to learn, you could not expect a salary to begin with. You should enter at one or other of the horticultural colleges for say two years, and then get a situation in some good fruit nursery.

HARDY HERBACEOUS PLANTS: *R. B.* All the species you mention are herbaceous perennials, and the schedule does not appear to exclude them, unless it can be shown that they are not hardy. *Lobelia cardinalis* is scarcely likely to be quite hardy in your district of Cheshire, although plants have lived out of doors in a Surrey garden during the past winter.

HEDGE DAMAGED BY FIRE: *Privet Hedge.* If the plants are not killed cut them back as far as is necessary to remove all the scorched wood, and they will make fresh growth. Privet may be cut back to almost any degree, and still continue to live.

HONEYSUCKLE: *In a Maze.* The Dutch Honeysuckle is *Lonicera periclymenum helgica*. The early and late respectively we presume are but varieties of it.

LILY DISEASE: *G. W.* The soil contained plenty of fungus, which was probably the cause of your Lilies failing. You should sterilise the soil by baking it.

MAGGOTS IN PLUMS: *T. W. O.* A somewhat late brood of the larvæ of the Codlin moth, *Carpocapsa pomonella*. The Plum is rarely attacked by this insect, so also are Quince, Peach and Apricot, and still more rarely Walnuts. You should take immediate steps to destroy all the injured fruit.

MUSCAT GRAPES: *Norton.* There is no fungus present in the berries, the colouring appears to be due to the development of a black pigment, probably a reversion to a darker type.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—*R. W.* Apples: 1, Duchess of Oldenburgh; 2, Mr. Gladstone. Pear, Jargonelle. Plums: 1, Overall; 2, Belgian Purple; 3, Dennison's Superb; 4, Victoria; 5, not recognized; 6, Purple Prolific.—*B.* Apples: 1, Eckinville; 2, Sweet Lading; 3, not recog-

nised; 4, Lord Suffield; 5, Lane's Prince Albert; 6, Fearn's Pippin.—*A. B.* Plum, rotten when received. Apples: 1, Astrachan; 2, Domino.—*G. H. H.* The fruits did not arrive in good condition. Peaches for despatch by post or rail should be gathered when only half ripe and quite hard, and even then should not be placed one on the top of another. You did not use nearly sufficient material between the fruits and the sides of the box. You did right in sending leaves, and from them we might have ventured to name the fruits, but think it best to see both fruit and leaves before deciding. *A. G.* When sending Grapes for identification, you should send a whole bunch. We believe the variety to be that known as Black Prince.—*B. & W.* Pear Green Chisel.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*H. T.* 1, wild Chicory, *Cichorium Intybus*; 2, Hyacinthus (*Galtonia*) *candicans*; 3, *Vinca major*, variegated form; 4, send when in flower.—*M. B.* *Atriplex hortensis*.—*H. W.* *Lotelia syphillica*.—*J. F. S.* 1, *Olearia Haastii*, cuttings from the half-ripened wood; 2, wretched scrap, perhaps *Berberis Darwinii*; 3, *Cassinia fulvida* cuttings; 4, *Potentilla fruticosa* cuttings; 5, *Aconitum napellus*, very poisonous; divide the roots.—*G. H. S.* 1, a crested form of the common Male Fern, *Nephrodium filix-mas*; 2, *Aspidium aculeatum*; 3, *Polypodium vulgare*; 4, *Nephrodium filix-mas*; 5, *Hieracium aurantiacum*; 6, *Achillea ægyptiaca*; 7, *Kolreuteria paniculata*; 8, *Pyrus Aria latifolia*.—*Constant Reader.* *Justicia carnea*.—*J. H.* We do not undertake to name varieties of Fuchsias.—*Constant Reader.* The garden varieties of *Caladium* are so numerous, and the variation of each kind so great, that we cannot undertake to settle the point in question.—*B. W.* 1, *Clerodendron Balfourii*; 2, *Lantana hybrida*; 3, *Clerodendron fallax*; 4, *Statice latifolia*; 5, *Geenera cardinalis*; *Ruellia Portellæ*.—*G. H. B.* sends double the number. See our note under "Names of Fruits" published weekly. To compensate for the extra trouble, a small donation for the Gardeners' Orphan Fund will be acceptable. 1, *Actæa spicata*; 2, *Lycasteria formosa*; 3, *Linaria vulgaris*; 4, *Solidago virga aurea*; 5, *Veronica longifolia incarnata*; 6, *Veronica spicata*; 7, *Tanacetum vulgare*; 8, *Helianthus multiflorus*, double; 9, *Geranum*, perhaps *pratense*; 10, *Impatiens Roylei*; 11, *Polygonum*; 12, *Hypericum androsæmum*.—*D. T.* *Polygonum orientale*.

OAK LEAVES: *A. S.* Oak-spangles—a gall caused by an insect, *Neuroterus lenticularis*.

THE VOLUME FOR 1852: *H. W. R.* The only way of disposing of it is by advertisement, when some book-buyer may see the announcement.

VARIEGATED POTATO LEAVES: *H. S. S.* We think the variety Royal Gold very pleasing, but with regard to its commercial value we prefer not to express an opinion.

TOOLS: *J. B.* Consult our advertising columns.

VINES: *Mespilus.* The circumstances may be those described by your gardener. In any case he should be better able to judge the cause of the berries failing to colour than we can be, without knowing a single particular in regard to the construction of house or border, or of the cultivation that has been practised. Do as your gardener has suggested.

WATER-PEPPER: *R. E.* If by this you mean *Polygonum hydropiper*, it is a weed that probably grows in Hackney Marshes, or in that neighbourhood. We do not know where you could procure it, unless from some herbalist; but we should advise you to exercise great care in its use, or, better still, to refrain altogether.

WEIGHTS AND MEASURES: *Cymra.* A useful book with the market terms in their imperial equivalents is that published by Messrs. Geo. Newnes, Ltd., called the *Monster Table Book*, price 1d., obtainable at any bookstall.

COMMUNICATIONS RECEIVED.—*W. T. E. A. H.*—*J. S.*—*R. J. B.* & *W. D. S.*, Hereford.—*R. S. E. A.*—*W. Wells & Co.*—*W. Waller.*—*W. E. B.*—*H. Smith.*—*G. Upton.*—*A. H.*—*R. D.*—*J. Y.*—*Old Reader.*—*Income-Tax Adjustment Agency, Ltd.*—*J. H.*—*C. S. R.*—*H. W. W.*—*Rev. D. R. W.*—*S. W. N.* (accepted with thanks).—*T. B. D. & Co.*—*King's Acre Nursery Co.*



THE Gardeners' Chronicle

No. 924.—SATURDAY, Sept. 10, 1904.

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THE LARCH COLEOPHORA OR LEAF MINER

(COLEOPHORA LARICELLA, Hübner).

SEVERAL enquiries have been received this year concerning the curious diseased appearance of Larches. The young delicate needles have turned brown and died away at their tips in such numbers that the trees looked as if they had been badly scorched.

Besides this dying away at the tips some of the needle-tufts appear as quite dwarfed contorted masses, and many of the needles are bent or elbowed over. This latter appearance, the bending of the needles, is due to a great

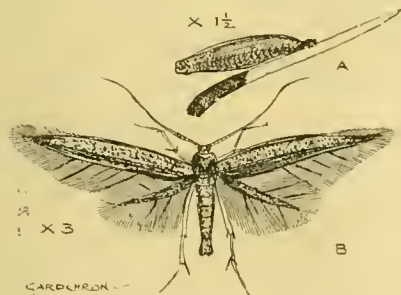


FIG. 70.—THE LARCH COLEOPHORA
(COLEOPHORA LARICELLA).

A.—Larval case with larval head extruded.
B.—Imago or adult insect.

abundance of the Larch form of the Larch and Spruce gall Aphis* (Chermes abietis laricis), which occurred early in the year, and which, judging from the number of eggs laid in the early part of June, will cause still further loss.

* Second Report Economic Zoology, p. 86, 1904, F. V. Theobald.

The first-mentioned appearances are due to one of the "case-bearing" Tineid moths, belonging to the Coleophoridae, and known as the Larch Coleophora, Larch Miner, or Larch Cigar-Case Bearer (Coleophora laricella). The only record I know in economic literature of this pest is in Schlich's *Manual of Forestry*,† where a short account and figure may be seen. Stainton‡ also records its life-history.

The larvæ of this small moth do very much damage to the trees in certain years by destroying the needles; and it is noticed that trees attacked by this pest are particu-

very much in shape; some are of pistol-like form (the Pistol Case Bearer of the Cherry, Coleophora anatipenella), the majority of a cigar-shape, as seen in the Larch pest dealt with here.

Notes regarding this insect injury have been sent me from Surrey, Hampshire, and Sussex. The insects have been very destructive around Wye and in other parts of Kent, but had escaped notice until the present season. Stainton records them at York, Manchester, Lancaster, Stockton-on-Tees, Bowness, and Renfrew. I have noticed them in North Wales, particularly one year at



FIG. 71.—THE LARCH COLEOPHORA.

A.—Larch shoot damaged by the larvæ.
B.—Shoot showing damage on the right-hand side only.
C.—The larval cases. (Half natural size.)

larly prone to be invaded with Larch canker. There seems to be no particular age of tree attacked, but I have not seen it on trees of any great size, and certainly the pest appears most often on trees about ten years old.

The Coleophoridae, or family to which this insect belongs, contains a number of small moths with narrow pointed wings with dense fringes. The larvæ are all provided with a definitely-formed case, which they construct as a rule from the material upon which they feed. These cases vary

† *Manual of Forestry*, Vol. IV., p. 311, 1895, Dr. Schlich.

‡ *Natural History, Tineina*, Vol. IV., p. 68, 1859, H. T. Stainton.

Aberglaslyn. They probably occur in most districts where the Larch grows. In continental Europe the insects have also a wide distribution, being especially common in Germany, and I have seen them in abundance in the Bernese Oberland and at Lucerne. They are also found in France and Finland.

LIFE-HISTORY AND HABITS.

The adult moth is of a uniform dusky grey, the hind wings being paler than the fore wings; both pairs are fringed with pallid hairs. The head and palpi are shiny grey; the male antennæ dusky, the female banded with fuscous and white stripes. The thorax is grey, and the abdomen dusky-grey with a dusky-yellow tuft at the apex. Legs grey,

the tarsi with traces of dusky bands. When the wings are expanded they measure about one-third of an inch, some specimens rather more, some rather less. This year the moths began to hatch out on June 9, somewhat earlier than usual.* They keep on appearing into July. When at rest, they lodge both on the needles and stem, keeping their antennæ stretched out straight in front of them. They fly chiefly at daytime, and readily move if the Larches are shaken even slightly. The female places her little roundish, yellow eggs on the needles, a single egg on each needle. Later they become grey, and in July they hatch out into small dusky-reddish larvæ. The young larvæ at once bore into the Larch-needles, and tunnel them out for about half their length, the tunnelled area being pale. These tunnelled ends shrivel up and are very conspicuous. The larva then forms a case, cutting off the mined portion, and carries it to a sound needle. At first the case is almost white, but it becomes dirty-grey, and then almost brown. It is lined with silk. The larva inside eats away a piece of the epidermis of the Larch needle and forces its head and anterior segments into the soft parenchyme. The larva leaves the case, and tunnels some way into the leaf, fixing the case on to the leaf meanwhile, and returning to it when it has finished feeding or is alarmed. The larvæ go on living in this way as long as any nourishment remains in the Larch leaves, and then they fix their cases on to the twigs and stems of the trees and remain dormant all the winter. Very often they may be found in cracks and crevices of the bark, and amongst Lichens growing on the Larches. By this time they are about one-fourth to one-half grown. When the young Larch-needles come forth in spring the larvæ carry their cases back to the needles and at once commence feeding, and cause the needles to wither away at the tips in characteristic fashion. The larvæ now grow rapidly, and the cases, originally formed out of cut-off pieces of needles, become too small; they then cut a slit up one side of the case and weave in another piece of leaf, and so increase the accommodation of the house.

The larva when mature is brown to dull reddish-brown in colour; the first segment has a black thoracic spot or shield more or less divided into two by a pallid median line; the second segment has two black spots, and all the three thoracic segments have a black spot over the legs. The anal segment has also a dark dorsal shield. When quite mature, the cases are firmly fixed to the needles or twigs, usually towards the end of May. The larvæ then cast their skin and change into long, narrow, dark-brown pupæ, about one-sixth of an inch long, covered with a few fine bristles. The moth emerges during the daytime as a rule, and soon flies about.

One brood only occurs during the year. It is said that the larvæ are very susceptible to injury from late frosts, wet and cold rainy weather, and hail; but this hardly agrees with recent observations, for the pest is more abundant this year than usual, and last year certainly was wet enough, and also the past winter.

Isolated Larch-trees are seldom much harmed; the pest is usually most destructive

where Larches are grown in dense masses together, but observations made this year show it to be harmful in mixed plantations, the trees inside the plantations being attacked just as much as those growing on the borders. According to *Schlich* the pest has been observed up to an altitude of 2,000 feet. It certainly seems most harmful where the trees are planted closely together, probably because the delicate moths get more shelter.

PREVENTIVE AND REMEDIAL MEASURES.

In plantations when this pest first makes its appearance, the infested trees should be thinned out in May and burnt. When the attack is more general, some good may be done by pruning the lower branches, where the larvæ mostly congregate. In small plantations, nurseries, and in gardens, the cases may be picked off in winter and destroyed. As far as possible mixed plantations should be put down, so that the pest does not obtain complete domination in the plantation. Suitable locality, soil, and open growth are also essential. *Fred. V. Theobald.*

THE STATICES.

DURING the past few weeks *Staticee* have been very prominent in markets. Many of the varieties are serviceable for supplying flowers for cutting. The florists like them because they are capable of lasting a long time in good condition. The slender form of *Staticee Gmelini* may be used in place of *Gypsophila*, and will keep much better. Most of the *Staticee* vary considerably. In varieties of *S. Gmelini* there are several shades of colour, but it is the soft blue and the white which are most serviceable.

Staticee Limonium, our British species, known as the "Sea Lavender," is one of the best, and of this there is quite a number of distinct varieties. *S. latifolia*, the broad-leaved species, is one of the most useful, the flowers being larger in size, and they vary from white to deep blue colour. I believe the yellow variety also belongs to this species, although I have seen it named *S. siuensis*. The blue, white, and yellow varieties are most appreciated, for the pink form is hardly decided enough in shade; yet by careful selection a pink variety worth growing for market might be obtained.

The yellow variety seen may be the Siberian species, *Staticee aurea*; but for market work names are not of much consequence, the thing is to obtain the best form of each variety, and these who can select stock while the plants are in flower have the best chance of getting what they want.

Staticee when once established give little trouble, and produce a large quantity of flowers. They succeed best in a good loamy soil that is not too heavy. Many of them may be raised from seeds, which should be sown in warmth early in the spring, and planted out after they are well established. In order to get extra strong plants, sow seeds in the autumn and keep the young plants in a light position in an intermediate-house, planting them out early in spring. Re-planting may be done at any time after they have finished flowering, but if it is intended to divide them, this should be done early in the spring. A little care is required to re-establish them after the roots have been much disturbed. When planting in heavy ground a good dressing of sea-sand will be beneficial, and if the sand is fresh from the shore all the better.

S. Halfordi (or *macrophylla*) is a fine plant, and the smaller-growing *S. Butcheri* is useful either for affording flowers for cutting or for use as a pot plant. During the past year or two flowers of these shades of colour have been more used than formerly. *Staticee Suworowi*, treated as an annual, is a pretty species for bedding, the tall branching

spikes of pink flowers being very attractive. If seeds be sown early in spring under glass, and the seedlings be planted out later, they will flower well the same season. The inflorescences should be cut before they are too far advanced, and dried without being exposed to the sun, the flowers will then retain their colour throughout the winter. *A. Hemsley.*

NEW OR NOTEWORTHY PLANTS.

LOTONONIS WYLIEI, J. M. Wood (*n. sp.*).

This is a much-branched, densely leafy under-shrub, reaching to 1 or 5 feet in height, and bearing a profusion of blue flowers. Stem and branches finely and closely silky pubescent, with minute whitish hairs. Leaves trifoliate, petiolate, stipulate; leaflets oblanceolate, mucronate, entire, subsessile, $\frac{1}{2}$ to 1 inch long, 1 to 2 $\frac{1}{4}$ lines wide in centre, pubescent, with silky white hairs above, more densely so beneath; petiole $\frac{1}{4}$ to $\frac{3}{4}$ inch long, pilose; stipules in pairs, resembling the leaflets, oblong, 2 to 4 lines long. Flowers axillary or terminal on the short branchlets, in four or five-flowered racemes, or solitary; peduncles $\frac{1}{2}$ to 1 inch long, pubescent, pedicels 2 to 3 lines long. Calyx gamosepalous, silky, tube campanulate, limb unequally 5-fid, the lowest segment longer than the others, equalling the calyx tube, the four upper ones connate, in two 2-fid pairs; all acute. Corolla papilionaceous, vexillum broadly retund, silky, pubescent externally; alæ oblong, auricled, cross-ridged on face, shorter than vexillum; carina obtuse, equalling the vexillum. Stamens monadelphous in a split tube; anthers dissimilar, alternate ones shorter and versatile, others longer and basifix. Ovary subsessile, pilose, many-ovuled; style curved, stigma oblique, capitate. Legume narrowly linear, pilose, acute, straight, 1 inch long, slightly compressed, subtended by the persistent calyx; seeds glabrous, subglobose, light brown.

Habitat, Natal, Zululand, Entumeni; altitude 2,000 to 3,000 feet, April. J. Wylie (Wood 8962); same locality, March, J. Wylie (Wood 9442).

This plant was first collected by Mr. J. Wylie, now Curator of the Durban Botanic Gardens, and so far as at present known it is confined to the locality given above. The aspect of the plant is very much that of a *Crotalaria*, but the legume is not inflated, and the flowers are blue, not yellow, as in most of the Natal species of *Crotalaria* known to us. It is very floriferous, and well worth cultivation. *J. Medley Wood, Natal.*

KEW NOTES.

PERISTERIA ELATA, Hook.—A good specimen of this plant is now flowering in the warm Orchid house. The form of its beautiful white flowers so resembles that of a dove, as to gain for the plant the popular name of "Dove Orchid." Few people succeed in growing this Orchid to perfection, though occasionally it is found flourishing in the conditions of an ordinary plant-stove, and receiving no special attention. It is several years since the species flowered at Kew, and until recently it has grown there very indifferently. The plant now flowering was grown in the Victoria-house, in a mixture of equal parts peat, sphagnum-moss, and leaf-mould, into which it has rooted vigorously, making pseudo-bulbs as large as swan's eggs, and leaves over 3 feet in length and $4\frac{1}{2}$ inches in breadth. The plant is now carrying four stout, erect spikes of flowers, the spikes averaging 4 feet in height, each carrying from twenty to twenty-five flowers and flower-buds, with usually five freshly-opened flowers, each of which remains fresh for about three days.

PELAGONIUM ZEYHERI.

This species is totally distinct from all others in the extensive collection of *Pelargoniums* at

* Mr. Willcocks, of the South-Eastern Agricultural College, Wye, tells me those he kept came out on June 4.

Kew. The plant is not merely of extraordinary form, but also of much elegance, as may be seen by the specimen now flowering in the division of

arise a number of leaves, having very slender petioles, some of which are of the exceptional length of 2 feet, making it necessary to fix a tie

more the appearance of a *Ferula* than that of a *Pelargonium* leaf. The large umbel of delicate, somewhat pellucid, pink flowers are borne on a stipe 3 feet in height, and contain from thirty to thirty-five flowers, borne on pedicels 3 inches in length. It is a native of South Africa, and is a rare species in this country, even in botanical gardens. W. H.

LITTONIA MODESTA.

ALLIED to the *Gloriosas*, among which there has been quite a revival in gardens during the last few years, the more modest *Littonia* merits notice on account of its graceful and free-flowering habit.

Our illustration represents a spray of a plant which had been cultivated in a cold greenhouse, and which has flowered regularly with Mr. James O'Brien at Harrow. As will be seen by reference to the illustration, the plant is a trailer of similar habit to the *Gloriosas*, and it requires the same treatment under cultivation, that is to say, it requires to be rested in a dry state, water being entirely withheld after the flowers are past, the growths completed, and indication given that the resting season has arrived by the leaves turning yellow.

Littonia modesta is a native of Natal and other parts of South Africa, and although three other species have been described, this appears to be the only one in cultivation. The flowers are of bright yellow colour, and being produced in succession as the plant grows, the flowering is continued until growth is completed.

REMARKS ON THE CONDITION OF THE FRUIT CROPS AT THE END OF JULY.

(See *Tables and General Summary*, ante, pp. 70-76.)

(Concluded from p. 166.)

S, ENGLAND, S. W.

CORNWALL.—This is another disappointing season. There was an abundance of bloom on all wall and bush trees, but a poor set followed. Peaches and Apricots set a moderate crop, but the cutting winds soon dispelled our hopes. The Peach-leaves were so badly blistered that for a time I feared the trees would not recover. Small fruits are nearly a total failure. Although they made vigorous growths last year, Raspberry-canes only grew for half their length—no doubt due to the sodden state of the ground during last winter and early spring. Our soil is poor and shallow. A. C. Bartlett, Pencarrow Gardens.

DEVON.—Many of the Apple trees are so thickly set with fruit as to require thinning, both bushes and standards being far too heavily laden with fruit. Lord Suffield and a few other varieties suffered from blight and fog. Pears are a light crop on wall and pyramidal trees. Cherries have dropped largely. Peaches and Nectarines are a light crop; the trees are also very much blighted and the foliage blistered. Strawberries and Gooseberries were an enormous crop. Both Red and Black Currants are small, and the foliage very much blighted. The soil here rests on the Devon waterstone, and is of a very light nature. Most vegetables and fruit trees thrive well with the exception of Plums. Geo. Baker, Membland Gardens, near Plymouth.

— With the exception of Apricots we have a good fruit crop. Apples are abundant on most trees, although there are complaints locally that some trees which were a mass of flower have not borne a single fruit. Pears are much better than they have been for the past two seasons. Peaches, Nectarines, and Plums are cropping well. Strawberries, Raspberries, Currants, and Gooseberries



FIG. 72.—LITTONIA MODESTA.

the T-range containing Cape plants. The plant has an erect, unbranched, woody stem some 6 inches in height, from the crown of which

to each leaf. The blade of the leaf is trichotomously divided into very numerous grass-like divisions, from 6 to 9 inches in length, giving it

have never been better. Our soil is a sandy loam of good depth, resting on the old red sandstone. *Jas. Mayne, Bilton Gardens, East Budleigh*

— Fruit-trees blossomed freely, with the exception of Plums, and the fruit set well; but with the continued east and north-east winds, together with low night temperatures, growth was retarded, and many fruits dropped. The Apple and Pear crops in this district promised to be above the average, especially the former; but it is not the phenomenal crop we anticipated. *Geo. Foster, Glendaragh Gardens, Teignmouth.*

— There was never a better prospect for a good Apple crop than when the trees were in blossom in April; when setting however they were badly blighted, and only a moderate crop now remains. Bush fruits are about the average quantity. Our soil is light in texture on the chalk, with clay in places. *C. W. Bloye, The Gardens, Pinhay, Lyme Regis.*

— Both Apple and Pear-trees carried a wealth of blossom, but early expectations of a heavy crop will not be realised. I think the soft condition of the wood is responsible for so much fruit dropping. Early varieties of Apple-trees are generally carrying good crops, the heaviest crops being Lord Suffield, Lord Grosvenor, Irish Peach, Warner's King, Cox's Pomona, &c. Varieties of Pear-trees carrying most fruits are Louise Bonne of Jersey, Pitmaston Duchess, Doyenné du Comice, Catillac, Uvedale's St. Germain, and General Todleben. Our soil is a heavy loam over sand and clay. *T. H. Slade, Poltimore Gardens, Exeter.*

GLoucestershire.—The fruit crops in this locality are better than they have been for the past two years. All kinds of fruit trees gave great promise at the blooming period, but the cold nights during the latter part of April and early in May, caused some varieties of Pears, notably Williams' Bon Chrétien, to set badly. At the present time the trees are suffering from want of rain. Strawberries have supplied a marvellous crop of fruits of good quality. *Geo. W. Marsh, St. George's Nursery, Cheltenham.*

— The Strawberry-crop was the best we have had for many years, both in quantity and quality. Raspberries are a very heavy crop, and of fine quality. Plum-trees have not half a crop in gardens this side of Gloucester. Good Pears are very scarce. Our soil here is heavy on the blue lias. *William Keen, The Gardens, Bowden Hall, near Gloucester.*

— Apples are abundant and good; Pear-trees did not produce much bloom, consequently they have little fruit. Cherry-trees bloomed profusely, but much of the fruit dropped, especially the variety May Duke. Bush fruits have done well, but Gooseberries on unprotected trees had many buds destroyed by bullfinches in the spring. Plum-trees did not bloom freely; still, we have a moderate crop of fruit. Peach and Nectarine crops are very good, and the trees healthy. Apricots are poor. Filberts are not quite as good as usual. The top spit of our soil is fairly stiff, and when dry is hard; it works better after a shower. The subsoil is clay in some places, sandy marl in others. *John Banting, Tortworth Gardens, Falfield.*

HEREFORDSHIRE.—The fruit crops on the whole never promised better at blossoming time than they did this spring, but with the exception of Apples the crops have turned out very disappointing. Even the Apple crop is light and variable in places. Our soil is a stiff loam. *John Watkins, Pomona Farm, Wittington.*

— The fruit crops in this district are, taken as a whole, very good. Apple-trees are heavily cropped, and the fruit is clean. Pears are an average crop. Cherries, both sweet and Morellos, are very poor. The Apricot crop is thin. Straw-

berries produced enormous crops, the best with us being Royal Sovereign, Laxtons' Fillbasket, Trafalgar, and Sir Joseph Paxton. Raspberries are carrying excellent crops of fine fruit. Currants are abundant and good. Gooseberries are excellent crops. The growth on the fruit-trees this season is very clean and good. It is the best season we have had for years past, but rain is much needed. *Thos. Spencer, Goodrich Court Gardens, Ross.*

MONMOUTHSHIRE.—All fruit crops in this district have been badly affected with blight, and in gardens lacking sufficient labour to combat the pest the trees have given most unfortunate results. The soil here is not favourable to fruit-growing, being of too light a nature and on a bad subsoil. *John Lockyer, Pontypool Park Gardens.*

— The Apple crop is a record one and of good quality. Most of the fruit-trees are growing in grass orchards on standard trees, pyramid or bush trees with few exceptions are confined to private gardens, although I consider the latter far more profitable trees for market purposes. Pears early in the season promised well, but unfortunately a few cold nights caused many of the fruits to fall. The same remark applies to Plums and Cherries. Small fruits have been very heavy crops of good quality. The soil in our district is partly on red sandstone and partly on alluvial heavy clay. *John Basham, Fair Oak Nurseries, Bassaleg, near Newport.*

— The crop of Apples and Plums is not an average one in this district. A few standard trees of the former, such as the varieties Duchess of Oldenburg, Lord Grosvenor, King of the Pippins, and Hawthornden, are carrying heavy crops, while Cox's Orange Pippin and Scarlet Nonpareil do well as pyramids in the garden, but are a failure as standards in the orchard. Pears are good, especially the varieties Durondeau, Madame Treyve, Marie Louise d'Uccle, Louise Bonne of Jersey, and Doyenné du Comice. Peaches and Nectarines set well, and required much thinning. Gooseberries, Raspberries, and Currants have yielded an enormous crop. Strawberries have also been abundant, and good in flavour. *W. F. Wood, Llanfrechfa Grange Gardens, Caerleon.*

— Bush Apple-trees, planted in 1893, are carrying heavy crops which have been much thinned, and varieties that have hitherto not borne heavily are especially prolific this year, viz., Annie Elizabeth, Blenheim Orange Pippin, Striped Beefin, and Gascoigne's Scarlet Seedling. Amongst light croppers, Lord Burghley, Scarlet Nonpareil, Egremont Russet, Beauty of Bath, and Ecklinville Seedling, may be noted. Of varieties that usually carry good crops, the following have required much thinning, viz., Seaton House, Lane's Prince Albert, Frogmore Prolific, Belle du Pontoise, Worcester Pearmain, Duchess of Oldenburgh, Grenadier, Cellini, King of the Pippins, Schoolmaster, The Queen, Sturmer Pippin, and Warner's King. Pear-trees on walls, are carrying good crops, but the fruit is thin upon Pyramids. Strawberries are exceptionally good, both with regard to quantity and size. The soil here is a cold, red, clayey loam, but that upon which the Apples referred to are planted was bastard trenched and properly drained. *Thos. Coomber, The Hendre Gardens, Monmouth.*

SOMERSETSHIRE.—The fruit crops in the spring were promising, but later they were much damaged by cold winds and rain. The soil in this neighbourhood is of a heavy nature, being on the blue lias stone; it cracks very much in dry weather, from which the crops suffer. *William Hallett, Cossington, Bridgwater.*

WORCESTERSHIRE.—The fruit crops on the whole are wonderfully good. Apples are plentiful and of good quality. The same may be said

of Pears, Plums, and small fruits. Pears, Plums, and Apples have had to be thinned heavily. All fruit-trees are summer-pruned, but not to any hard-and-fast rule. Our soil is a medium loam overlying the new red sandstone formation. *A. Young, Witley Court Gardens, Stourport.*

— Taking the district generally, we have moderate crops of hardy fruit. The crops are certainly not so heavy as they promised to be at one time, for quantities of fruit have dropped off, doubtless owing to the immature condition of the wood and buds last autumn, entailing imperfect development of the organs of the flower, followed by imperfect fertilisation. It was apparent that many flowers failed to open properly, the petals remained incurved, and the other organs looked weakly and deformed. These remarks apply chiefly to Apples. The Pear-midge is answerable for the loss of the bulk of the Pear-crop, and this insect has spread rapidly and widely during the last few years, for which I know of no positive remedy. Royal Sovereign and Leader have been the two best Strawberries this year. We have suffered considerably from drought. *W. Crump, Madresfield Court Gardens, Malvern.*

— All bush fruits are good and plentiful. Strawberries have been very fine, but were quickly over, the plants being much affected by drought. Raspberries were very good. Apples are a good crop, free from caterpillars and clean in growth. Young trees of Lane's Prince Albert, Peasgood's Nonsuch, Bramley's Seedling, Golden Noble, Cox's Orange Pippin, Newton Wonder, The Queen, and Allington Pippin are very good. Pears and Plums are an irregular crop, the best crops being upon wall-trees. Louise Bonne of Jersey, Pitmaston Duchess, Beurré Diel, Doyenné du Comice, and Winter Nelis are all good. Kirk's Plum, Coe's Golden Drop, Monarch, Early Transparent Gage, and The Czar are good. Our soil is a very heavy loam, with clay subsoil. *F. Jordan, Impney Gardens, Droitwich.*

WALES.

CARDIGANSHIRE.—Taken on the whole in this county, the fruit crop this year is far above the average, both in the light soil (which is general) and also in the heavy soil of the valleys. *Geo. Wright, Bronwydd Gardens, Maeslyn R.S.O.*

DENBIGHSHIRE.—The Apple crop in this district is fairly good, but standard Pear-trees, owing to the wet weather last year, did not ripen their wood. On wall-trees there is a good crop of Pears. The Strawberry crop has been a very good one. *Walter Weir, Rhosnessney Gardens, Wrexham.*

GLAMORGANSHIRE.—I do not recollect fruit-trees appearing so promising when in bloom as they did this year, for without exception every kind was literally covered with blossom, and with the exception of Cherries and Plums, which are practically a failure, all fruit-trees are carrying heavy crops of fruit. Apples are exceptionally good and clean, also Peaches and Nectarines. Plums and Cherries have been badly affected with blight, but the trees have improved greatly. Pears are rather partial, but clean and healthy. Strawberries, Black and Red Currants, Gooseberries, and Raspberries have record crops, the fruits being large and clean. Our soil is a light loam, with a subsoil of gravel. *Richard Milner, Margam Park Gardens, Port Talbot.*

MERIONETHSHIRE.—The fruit crops in this district are very plentiful. Cherries, after an abundance of bloom, failed to "stone," and the fruit dropped freely. Black Currant-bushes are rather badly affected with fly, but are carrying an excellent crop of fruit. Gooseberries have an enormous crop of fruits of good size and quality. *J. S. Higgins, Rhug Gardens, Corwen.*

PEMBROKESHIRE.—The geological formation is very singular, consisting in places of millstone grit overlying limestone, in another part of old silurian, and another of deep beds of marshy peat with loam on the surface. It is impossible to say on which soil the fruit-trees succeed best. All have the same aspect, which is sheltered from cold winds. We have about 100 of the leading varieties of Apples, and they all do well. *George Griffin, Slebeck Park Gardens, Haverfordwest.*

9, IRELAND, N.

ARMAGH.—Fruit crops in general are very good this year. There was a wealth of bloom, but strong westerly winds prevailed during and after the setting period of stone fruits, crops of which are in consequence not so heavy as they would have been. Damsons are a very light crop. Black Currants set extremely well, and promised an extraordinary crop, but greenfly destroyed the bushes all over the county. Our subsoil is a stiff, heavy red clay, the top spit a very good loam. *W. R. Spence, The Manor Gardens, Loughgall.*

the flowers, however, set very thinly, and the crop of Plums and Cherries is now very light, except where the trees were favourably situated. Pears are rather better, some of the trees carrying full and even heavy crops. Small fruits are all good, with the exception of Black Currants. The soil is a cold, heavy clay. *Fred. W. Walker, The Gardens, Sion House, Sion.*

— The fruit crops in this district are above the average; those of Gooseberries and Strawberries are exceptionally heavy. Black Currants in some gardens suffered severely from aphides. Pears, although the trees flowered well, have only set an average crop. Apple crops are above the average, the fruit on most trees requiring to be thinned. *Jas. Small, Caledon Castle Gardens, Caledon.*

10, IRELAND, S.

CORK.—Strawberries of early, mid-season, and late varieties were all of excellent quality, of enormous size, and an abundant crop. Gooseberry bushes are carrying large crops of fruit of good size. Black, Red, and White Currants, and

CHANNEL ISLANDS.

GUERNSEY.—Our soil may be described as light to medium loam. The northern portion of the island contains a good deal of sandy soil. Fruit crops are very irregular this season, much more so than we have ever known them to be. In some gardens they are good, whereas in others they are scarcely average. Plum crops generally are light, probably owing to the immature condition of last year's wood; still there was an enormous display of bloom. *C. Smith & Son, Caledonian Nursery.*

JERSEY.—The fruit crops, with the exception of small fruits and Strawberries, are below the average. No doubt the cold, wet season of 1903 was responsible for immature fruit-buds, which caused the failure in the setting of the blossom. Pear-midge has destroyed the bulk of the Pears, particularly the variety William's Bon Chrétien. When the abnormal swelling of the affected fruit shows the presence of the grubs, the diseased Pears are gathered and burnt. *H. Becker, Caesarean Nurseries, St. Saviours.*

BUDS: ADVENTITIOUS OR OTHERWISE.

THE production of buds from any part of a plant, almost without exception, is an occurrence which ought not to occasion surprise. Nevertheless, when an Apple is seen protruding from the trunk of the tree far away from the branches, it is not wonderful that some astonishment is felt. But the phenomenon, if unusual, is not strictly abnormal. A bud may be superficial in its origin, or it may start from the central wood of the branch and force its way outwards. There are many plants which naturally produce their flowers from the trunk in this manner—the Cacao (chocolate) is one of them; *Grias cauliflora* is another. Various Browneas and Theophrastas supply other illustrations; indeed, they are numerous. For our illustration we are indebted to the courtesy of the Editor of the *South Eastern Gazette*. The Apple shown in the photograph (fig. 73) is growing on the trunk of a tree on the Frant Fruit Farm, Maidstone, in the occupation of Mr. Edmonds. We have not ourselves seen a similar case in the Apple, but have more than once seen a fully formed bunch of Grapes proceeding from the main trunk of a Vine. In all these cases it would be desirable to make a cut lengthwise through the stem and the inflorescence in order to trace its real origin. Unless this is done some doubt may be experienced as to the source and nature of the adventitious growth.



FIG. 73.—APPLE PRODUCED FROM THE TRUNK OF A TREE OF "POTTS'S SEEDLING," 14 YEARS OLD.

GALWAY.—The soil in this district is of a light nature and shallow, with little or no fibre, resting on limestone, which appears through the surface in several places, therefore in dry seasons we suffer from drought, with consequent loss of fruit crops, Strawberries especially. We have this year fruit in abundance, excepting Cherries. *Thos. Dunne, The Gardens, Lough Cutra Castle, Gort.*

— I never before saw such good fruit crops in this district. The following three Strawberries I find to be best here in the order named—Leader, Monarch, and Royal Sovereign. The soil is heavy stiff clay, resting on a cold subsoil. *And. Porter, The Gardens, Woodlawn.*

LONGFORD.—Our soil generally is a heavy cold clay, resting on a yellow subsoil. We find it suits small fruits; but Apples and Pears are liable to American blight and canker. *John Rafferty, Castle Forbes, Newton Forbes.*

SLIGO.—Apples, also most of the stone-fruits, succeed well with us, and small fruits and Strawberries particularly so. The Laxton Strawberry has this year produced a very heavy crop of well-coloured, medium-sized berries. The soil here is a rich retentive yellow loam resting on a limestone subsoil. *J. Sangster, The Gardens, Lissadel, Sligo.*

TYRONE.—Apples are an enormous crop. Pears, Plums, and Cherries have been disappointing, considering the splendid show of bloom they gave,

Raspberries also have heavy crops; the fruits are of large size, good colour, and flavour. Our soil is of a rich nature, with a sub-stratum of limestone. *C. Price, The Gardens, Mitchelstown Castle.*

KILDARE.—The fruit crops here are very abundant, with the exception of Apricots and Peaches, not many of which are grown outside. The quality all round is superior. The soil is a stiff clay on a retentive subsoil of bluish clay, which if brought to the surface will not even grow weeds. We obtain splendid flavour in all fruits. *Fredk. Bedford, Straffan House Gardens, Straffan Station.*

KILKENNY.—Gooseberries are a splendid crop, and where the fruits have been thinned out, are of fine quality and much prized for dessert. Of Strawberries, Royal Sovereign carried grand crops on young plants; Givon's Late Prolific was exceptionally good, having an immense crop of fine fruits of good flavour. This variety is an acquisition in these gardens. Apples look exceedingly promising, especially on young trees which have had the fruit thinned. Lord Grosvenor, Bismarck, Royal Jubilee, Tower of Glamis, Golden Spire, Schoolmaster, all do exceedingly well here. The soil is a warm, sandy loam, receiving an average yearly rainfall of nearly 40 inches. *J. G. Weston, Bessborough Gardens, Piltown.*

ST. LOUIS EXHIBITION.

THE GERMAN PAVILION.—The German National Pavilion at the World's Fair, St. Louis, occupies a very prominent position on Art Hill, to the east and overlooking the Cascades Gardens, which form the main picture of the exposition grounds. The building, which has a very imposing appearance, represents the Royal Castle of Charlottenburg, near Berlin. It was the original intention of the German Commission to have a beautiful terrace-garden around the pavilion. This, however, owing to the unstable nature of the hill-sides, had to be abandoned, and the ground treated quite plainly. A hedge of *Ligustrum ovalifolium* forms the boundary of the section, and this has succeeded remarkably well, being probably the best hedge within the exposition. Good-sized trees of the soft Maple, *Acer dasycarpum*, have been planted on the east side of the building for shade. The only exhibit on the ground is a collection of *Rhododendrons* sent by Paul Seidel, of Dresden. An excellent lot of some ninety specimen Bay-trees imported by the Commission

from Düsseldorf are placed around the building, and add greatly to its imposing aspect. Mr. Ludwig Baumann, sometime student at the Royal Gardens, Kew, is in charge of the pavilion and grounds.

In the buildings of Forestry and Agriculture Germany exhibits somewhat more extensively than in horticulture. Amongst the forestry exhibits is a very interesting series of sections cut from the trunk of a Scotch Fir, showing the influence of prevailing winds, the weight of heavy branches, &c., on the deposition of the wood tissues. There is also a very interesting series of photographs showing the routine of work in the German Pine-forests from the time that the tree is planted until it is ready for cutting.

In the Agricultural Hall the most interesting exhibit to gardeners is that of the German Kali works. Practically all the world's supply of potash is derived from the mines belonging to this company, and here are shown samples of the crude minerals and the refined salts used as fertilisers; also samples of Corn and Potatoes, with photographs showing experiments with fertilisers at various experiment stations. *T. W. Brown, St. Louis.*

EARLY FORCING OF DAFFODILS.

THE comparative ease with which some varieties of *Narcissus* may be forced into bloom has rendered this popular class of bulbous plants indispensable for early forcing purposes. As one of your readers and contributors who can look back upon the advent of the early forcing of these bulbs, I regard the popularity of the race at the present day to be due in a great measure to the suitability of some *Narcissi* for early forcing. As a forced flower, appearing in not a few of the most fashionable floral decorations of the last decade, the common double Daffodil has played the part of pioneer in what is now a great industry, giving employment to many thousands of persons. Twenty years ago the fact that *Narcissus Telamonius plenus* [*N. Pseudo-Narcissus*] could be forced into bloom was not discovered, yet to-day many hundreds of thousands of these plants are grown and prepared specially for this work.

At the start many kinds were tried—for not all the varieties of *Narcissus* will force, or even succeed if placed in glass structures at all—and of these it was obvious that for forcing very early a few kinds only would be suitable. Some varieties indeed are so impatient to heat or even warmth that they remain under ground, only to appear when once again placed in the open, to flower perhaps a little later than is their wont. Quite an interesting chapter might be written on this phase of the subject, and it would be interesting to know why large bulbs of certain kinds possessing abundant roots refuse to grow when placed in heat.

Of the kinds that force well, none give more satisfaction than the old double yellow *N. Telamonius plenus*. Indeed this is the only reliable double variety for early work. Of single kinds, Van Sion is the best variety for forcing earliest, closely followed by the Tenby Daffodil and Ard Righ in the order given. Next to these in period of flowering are Horsefieldi and princeps, mid-January being counted fairly early for either in quantity. The single varieties first named may be had in good condition by Christmas. I should have mentioned Golden Spur, which with care may be had in flower before Horsefieldi. Single-flowered varieties of the incomparabilis type are numerous, and will flower about the third week in January, when many other good sorts are also obtainable in bloom. Growers who prefer dainty to showy varieties should obtain *N. Leedsii* (type) and *N. L. superba*, the latter being exquisite in the pale biscuit-colour of its drooping cup.

A very precarious variety is the beautiful

single form of *N. Poeticus* known as *ornatus*. Heat has a distinctly retarding influence over this variety, and this influence is not of a temporary nature. Too early housing of the plants has a similar retarding influence. The way to overcome this difficulty is to pot the bulbs early in September, plunge the pots in ashes outside till about Christmas, then place them in gentle heat indoors, when they will grow quickly and develop good flowers. If planted early, most of the other varieties named may be introduced to slight heat early in December, a temperature of 45° to 50° being sufficient at the start. Good bulbs, early planting, and plenty of healthy root-fibre are essential to success in the forcing of Daffodils. Ample supplies of moisture to the soil are required, especially when the bulbs are growing freely and the flowers are appearing. Another essential feature is that of maintaining a suitable atmospheric moisture. Bottom-heat is quite unnecessary; it may prove disastrous in the hands of the beginner, and is best dispensed with altogether. By adopting the practice described above, forced flowers may be had in January as good as those that appear in the open in April. When the flowers are in the bud state use the syringe freely; do not maintain a fierce fire-heat during the prevalence of London fogs. Sunlight is the greatest of all stimulants to successful forcing. *E. H. Jenkins, Hampton Hill.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

The gathering and storing of Apples and Pears.—If the fruit-room has not already been thoroughly cleaned and put in good order for the reception of Apples and Pears, let this work be done at once. It is essential that the atmosphere of this room should be perfectly sweet and fresh in order that the fruits may keep good and retain their good flavour for as long a period as possible. Nothing is likely to impart bad flavour to ripe fruits more so than musty hay and straw; the effects may be frequently detected in late fruits at exhibitions, though the fruits are perfectly sound. The crop of Apples this year is a plentiful one, and as some of the trees are bearing very heavily a great quantity of Apples will be brought down in the event of a severe gale. Such fallen fruits will be of little use except for present consumption, and should for that reason be kept apart from gathered fruits. Apples should be left on the trees until the seeds begin to turn a dark brown colour, and the fruits will part with ease from the branches. Some of the earlier varieties must be given attention at once, otherwise the fruits will drop and receive damage. In removing the fruits from the trees to the store-room, handle them with every care, and when they are perfectly dry. If there are plenty of shelves, store the fruits in single layers, otherwise they may be placed three or four layers deep. Put aside all speckled or damaged fruits, and examine at intervals the sound ones that have been stored, removing any that show signs of decay.

Strawberries.—Examine plants that after being forced in the spring were hardened off and planted-out on a border for the production of late fruits, and remove the runners. If the surface of the beds has not been treated already, remove any weeds there may be in the rows, being careful not to damage any of the berries, and then apply a little clean straw, raising the clusters of fruit gently with the hand before placing the straw under them. Viscountesse Héricart de Thury and Keen's Seedling are very useful varieties for cultivating in the manner described above. The first-named variety is also an excellent one for preserving purposes, and it crops very freely.

Morello Cherries.—Where these fruits are required for preserving in bottles or as jam, examine them at intervals and gather the darkest-coloured Cherries when they are in a perfectly

dry condition. In the case of fruit required for the making of Cherry brandy leave the stalks on the fruits, each one about half an inch in length. Morello Cherries, in addition to being useful for these purposes, are appreciated by some for their pleasant acidity and attractive appearance, and are used for dessert.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

French Beans.—The temperature at night has fallen as low as 40° here, and therefore no time must be lost in getting the frames into position over late-sown French Beans. Mats or other covering material should also be got ready for use, as a sharp frost may occur any night, especially in northern districts. Make another sowing of Beans in pots for forcing, and unless there is a special demand for them at a certain date, it will be best to place them in a cold frame well exposed to the sun, where they will grow slowly and produce sturdy plants for removing to a warm temperature at a later date. It will be found that plants so treated will produce a better crop than others that are placed in heat at once, and so become "drawn" and weakly. Beans which were sown in pots and put into frames some time ago may now be through the surface, and should therefore be afforded as much light and air during favourable weather as possible, and it will be necessary to prepare the forcing-pits for their reception. This work cannot be carried out too carefully, and if the pits at present contain any other plants let them be removed, and then thoroughly fumigate the pit with sulphur, and afterwards wash the glass and woodwork with soft-soap and water, finally syringing all down with clean water, or the soap if left on for any length of time will loosen the paint. Where the walls are lime-washed, let this be done afresh with some lime direct from the kiln, and mix with it sufficient soft-soap to make the brush run smoothly, and $\frac{1}{2}$ lb. of flowers-of-sulphur to 5 gallons of wash, with which it should be well mixed. Work this thoroughly by means of a brush into every hole and crevice upon the wall. If the wash is used upon the walls of passages where clothing is likely to come in contact with it, melt some fat and mix this with the lime, applying it whilst hot by means of a brush. When all has been finished, and the walls have dried, syringe the whole of the interior of the house or pit with water and paraffin, at the rate of half-a-pint of paraffin to each gallon of water. When the surfaces have again dried, the house will be ready for the Beans. If proper care be afterwards taken in regard to watering, damping, and ventilating, but little trouble is likely to arise from the ravages of insects.

Tomatoes that are growing in pots out-of-doors, and have a crop of unripened fruits, should now be removed inside, and fastened to the back walls or the roof of pits that have been thoroughly cleaned and prepared for them. Maintain a buoyant atmosphere for these plants by employing a moderate amount of heat in the water-pipes, and by admitting air when the weather is favourable. Fungoid diseases are more liable to attack the plants if the atmosphere becomes damp or stagnant. Any fruits which are commencing to change colour on plants out-of-doors should be gathered and placed indoors to ripen. Have everything ready for covering up these plants in case of frost. Plants indoors that are past bearing should be cleared out and burned, and the house prepared for another crop in the same way that has been advised for the house to contain Beans. Some of those plants in pots out-of-doors which are just beginning to fruit, if turned out of their pots and planted into a border indoors without unduly disturbing the roots, will grow away freely and maintain a supply of fruits well into the winter. Expose all fruits to the sun as much as possible by shortening the leaves by which they are shaded, and by cutting out all superfluous growths.

Double Cropping.—Where Savoys and other such plants have been planted between the lines of Peas, have the Peas cleared off the ground as soon as they are past bearing, so as to allow a

greater degree of air and light to circulate among the plants that remain.

* * In last week's Calendar, under "General Work," sheet of galvanised iron should have read *shed* of galvanised iron.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Hydrangea Hortensia.—Cuttings should be inserted at the present time to form plants for flowering in the late spring and early summer months. These plants are very valuable for conservatory and house decoration, for dwarf plants, carrying a good truss of bloom, may be grown in 5-inch pots. The tops of strong, short-jointed shoots should be chosen for the cuttings, and the shorter these are made, so long as they can be fixed in the soil with a peg, the better the cuttings will make roots. Generally speaking, the cuttings may be cut back to the base of the second pair of leaves, so that when the cutting is inserted, the centre bud, containing the dormant flower-truss, will be only just above the surface of the soil. If the cuttings are too hard at the base, they frequently fail to make roots, or at the best the process is much delayed. Let the cuttings be inserted singly in 3-inch pots, which have been previously filled with a sandy soil, and place them under a hand-light in an intermediate-house, or plunge them in a hotbed with a moderately low atmospheric temperature. When propagating *Hydrangea Hortensia* and its varieties at this season the chief object aimed at is to induce the cutting to make roots without starting the flower-buds into growth, and in order to effect this it is necessary to gradually harden the plants off directly it is seen that the cuttings are rooted. The plants should then be placed in a coolhouse or pit, and when the leaves begin to turn yellow, water should only be afforded occasionally. In January or February repot the plants into 5-inch pots, and afford them the temperature of an intermediate-house, where they will quickly commence to make growth, and ultimately flower when from 12 to 18 inches high. A suitable compost for *Hydrangeas* may consist of three parts loam and one-half part well-rotted manure.

Centropogon Lucyanum.—As this useful winter-flowering plant completes its growth it should be afforded more air and as much light as possible; the plant will then freely produce its flowers along the greater portion of the gracefully arched branches. When well grown the flower-stems are sufficiently strong to support themselves, and the plants are most effective when thus grown. If, however, staking is unavoidable, it should be confined to a single stake in the centre of the plant, to which the stems should be loosely slung with thin strands of raffia. When the plants have filled the pots with roots, manure-water may be afforded with advantage. When in full flower the plants should be placed in the driest part of the house, as the flowers are inclined to damp off in a close and moist atmosphere, or if the water from the syringe be allowed to fall upon them.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Chysis and Pleione.—Remove such Orchids as *Chysis bractescens*, *C. aurea*, *C. lavis*, *C. Chelsonii*, and *C. Sedenii* from the Cattleya-house, and suspend them close up to the roof-glass on the lighter side of the East Indian-house. The extra warmth of this house, with increased supplies of water, will enable the plants to complete their growths quickly. As soon as the leaves commence to turn yellow in colour the plants should be exposed to full sunshine so that the new pseudo-bulbs may become properly matured. The *Pleiones* having now completed their pseudo-bulbs should be removed to the cool greenhouse, and suspended with the *Dendrobiums* now maturing their growths. Water must be afforded them occasionally until the leaves have fallen and the first flowers open, but it should afterwards be withheld, or the flowers will quickly damp off.

Catasetums, *Cynoches*, *Mormodes*, &c., now forming their new pseudo-bulbs, should be placed

where they may obtain uninterrupted sunshine, and a drier and more frequently renewed atmosphere than they have had hitherto, in order that the pseudo-bulbs may become sufficiently ripened to pass safely through the long resting season. While the leaves remain fresh, give the plants abundance of water at the roots, but so soon as they commence to turn yellow the amount of water must be gradually reduced, and when they fall it should be discontinued altogether. Other species which now require similar treatment are *Thunias*, *Cyrtopodiums*, *Cyrtopera*, *Lissochilus*, and the deciduous *Eulophias*. The deciduous *Calanthes* should now be elevated well up to the roof-glass, and arranged so that each plant will obtain its full share of sunlight. They will need to be thinly shaded only for a hour or two during the middle of the day, when the sun is very bright. The plants will become dry more quickly under these conditions than they have done during the growing season, therefore frequent supplies of water will be required. Weak liquid cow-manure may be afforded alternately with clear water, and will strengthen the plants.

Laelia elegans and its varieties are now producing their flowers, and at this period the new pseudo-bulbs are especially tender, and are liable to decay away if too much water be afforded to the roots, or if the temperature of the house falls too low at night, particularly if the atmosphere is very damp. When the new growths are completed, place the plants in a dry, warm corner of the Cattleya-house, where air is admitted freely, and afford water with extra care. After the flowers have faded the plants may be repotted, the young roots which are emitted from the base of the flowering growths will soon enter the new soil, and the plants become quickly re-established. Use a compost of the best fibrous peat, leaf-soil, and sphagnum-moss in equal parts, with plenty of broken crocks and a little coarse sand mixed with it. Apply a surface dressing about 1½ inch deep with clean, picked living sphagnum-moss. It is important, after repotting the plants, that they should be made thoroughly firm in position by tying several of the strongest pseudo-bulbs to neat, strong stakes.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Figs.—As the first crop is now ripening in the latest house, the conditions of the house should be modified in order to secure a long succession of fruits. The fruits being in several stages of development, the roots of the trees must be supplied with abundance of water. Discontinue the use of the syringe, but keep the atmosphere from becoming dry by frequently damping the surfaces in the house. This is necessary in order that the fruits shall swell freely and the foliage remain healthy. Admit abundance of air during the day and a little at night, and employ sufficient fire-heat to cause a good circulation of warm air. Much care is necessary when gathering *Figs*, as the unripened fruits are extremely insipid. If the skin is cracking and there is a "honey drop" in the open eye of the fruit, it is in perfect condition for gathering. Nothing contributes more to high quality in the fruits, or to securing a heavy crop, than keeping the points of the shoots well up to the light; indeed, the nearer the points of the shoots are to the glass the better, so long as there is sufficient space between the foliage and the glass for a circulation of air. The training of *Fig*-trees to represent the natural habit of the *Fig* in the open is good practice.

Late Muscat Grapes.—Afford sufficient moisture to the roots to keep the berries plump, and employ the necessary amount of fire-heat during the day to cause a free circulation of warm air. Do not allow the temperature at night to fall below 65°, and take care that there is enough fire-heat to prevent the condensation of moisture upon the berries; a moderately dry atmosphere is necessary. Admit air to the house when the weather is favourable. Shorten or cut away sublaterals, and thus admit as much light and air among the Grapes as possible. When the Grapes have become thoroughly mature, gradually reduce the atmospheric temperature to about 50° at night.

Strawberries in Pots should be standing in a warm position, with plenty of space between the pots to allow the sun and air to circulate freely around them. Plants intended for forcing early will have filled their pots with roots by this time, and if they are in the least degree weakly, they should be afforded liquid-manure, the most suitable for this purpose being diluted drainings from the stables. In some varieties the plants produce more than one crown each. In such cases they should be reduced to one, choosing the strongest or central one. This work should be done as soon as the young crowns can be taken between the finger and thumb, at which stage they can be removed quite easily. This thinning out will naturally increase the strength of the main crowns. Remove all runners as fast as they appear, and should earth-worms obtain access to the pots, weak lime-water will expel them.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Moutan and Herbaceous Pæonies.—Any ground it is intended to plant with *Pæonies* should be trenched as soon as it is vacant, affording a good dressing of rotten manure at the same time. If the ground is of a very heavy nature, some lime or old mortar-rubble may be dug in afterwards for the herbaceous varieties, but for the moutan varieties some fine peat or good leaf-mould is better. Both sections may be planted as soon as the roots have been afforded a good soaking with water.

Propagating.—All cuttings of bedding plants ought to have been inserted ere this. Place them in cold frames, or in some structure where they will be protected from heavy rains. At this date cuttings should not be placed in the boxes very thickly, especially if they have strong foliage and the wood is unripe, or "damping" will occur. A few hundred cuttings of each variety should be inserted beyond what it is expected will be required, to allow for failures. Any old plants that are required to be kept through the winter may be cut over, and by the end of the month will have made nice bushy plants for potting-up, or they may be planted out in a warm frame where they will take up less room. Some old plants of *Alternanthera* should be lifted now if they can be spared, and when potted-up be placed on a shelf in a warm, moderately dry atmosphere. Plenty of all varieties should be thus saved, as they are very liable to damp off.

Shrubs.—The clipping of Yew hedges should have been finished, and in northern districts the work should have ceased a few weeks earlier. The snow does not break and bend them about as it would if the work of clipping was left till spring, especially in cases of large Yew hedges. The wounds get callused over before frost occurs, and in August more time can be spent upon the work than could be spared in spring. If they are cut early in spring and late frosts occur, the growths turn brown and have a bad appearance for several weeks. Similar remarks apply to Box-edgings in the kitchen-garden, which are also best trimmed in autumn. Before cutting Yews, branches will have been tied down to fill up gaps, but plain wire should not be used for this; strong, well made tar-string is preferable, or old disused electric wire cased with rubber may be used. It will last some time before the rubber becomes worn off. Great care should be exercised in clipping, as unskilled hands will soon spoil several years of work and training. Laurels and other shrubs may be cut, but not with the shears. Use a sharp knife or a pair of sécateurs, taking out the points and long ends. The mutilation of Laurels and other shrubs by the use of shears is to be condemned. Ivy should not be cut now excepting the long ends that would be blown about by the wind.

Early-flowering Chrysanthemums.—These are now at their best, and if the weather continues to be dry, they will require repeated applications of clear water alternated with liquid-manure. Make each plant secure against the action of winds.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, SEPT. 14—
 { Roy. Caledonian Hort. Soc.
 Show at Edinburgh (2 days).
 Derbyshire Agric. and Hort.
 Society's Show at Derby
 (2 days).
 THURSDAY, SEPT. 15—Brighton Hort. Soc. meeting.
 SATURDAY, SEPT. 17—German Gardeners' Club meet.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
 Dutch Bulbs, at 67 and 68, Cheapside, E.C., by
 Protheroe & Morris, at 10.30.
 MONDAY, SEPTEMBER 12—
 Flowering Bulbs and Lilies at Stevens' Rooms,
 at 12.30.—Nineteenth Annual Trade Sale of Pot
 Plants at Dysons Lane Nurseries, Upper Edmonton,
 by order of Mr. H. B. May, by Protheroe & Morris,
 at 11.
 TUESDAY, SEPTEMBER 13—
 Annual Trade Sale of Winter Blooming Heaths, &c.,
 at Burnt Ash Road Nurseries, Lee, S.E., by order of
 Messrs. B. Maller & Sons, by Protheroe & Morris,
 at 11.
 WEDNESDAY, SEPTEMBER 14—
 Flowering Bulbs, &c., at Stevens' Rooms at 12.30.—
 Annual Trade Sale of Winter-flowering and other
 Plants, at The Nurseries, South Woodford, by order
 of Mr. John Fraser, by Protheroe & Morris, at 11.
 163 cases of L. Harrisii, Roman Hyacinths, Nar-
 cissus, Palm Seeds, &c., at 67 and 68, Cheapside,
 E.C., by Protheroe & Morris, at 4.
 THURSDAY, SEPTEMBER 15—
 Thirty-sixth Annual Trade Sale of Stove and Green-
 house Plants, at Brimsdown Nurseries, Enfield
 Highway, by order of Mr. J. H. Thompson, jun., by
 Protheroe & Morris, at 11. Twenty-third Annual
 Trade Sale of Winter-blooming Heaths, at The
 Longlands Nursery, Sidcup, by order of Messrs.
 Gregory & Evans, by Protheroe & Morris, at 11.
 FRIDAY, SEPTEMBER 16—
 Unreserved Clearance Sale of the whole of the
 Greenhouse Plants and Effects at Homefield Nur-
 sery, Meopham, Kent, by Protheroe & Morris, at 11.
 —Unreserved Clearance Sale of the final portion
 of Messrs. B. S. Williams & Son's Collection of
 Established Orchids, at 67 and 68, Cheapside, E.C.,
 by Protheroe & Morris, at 12.30. Also 4,000 *Odonto-
 glossum luteo-purpureum* and *sceptrum*.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced
 from observations of Forty-three Years at Chiswick
 —58°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 7 (6 P.M.): Max. 66°;
 Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street,
 Covent Garden, London.—Thursday, Sept. 8
 (10 A.M.): Bar., 30.2; Temp., 59°. Weather—
 Rain falling continuously.

PROVINCES.—Wednesday, Sept. 7 (6 P.M.): Max. 63°,
 East Coast of England; Min. 51°, North of
 Scotland.

"The
 Organisation
 of
 Agriculture."

A BOOK has been lately published, through Mr. MURRAY, by Mr. E. A. PRATT, under this title, at a cost of five shillings, to which, in view of the general depression, we desire to call the attention of our readers,* as it concerns the market gardener and the small cultivator quite as much as the agriculturist proper. This work comprises a reprint of sundry articles contributed to the *Times*, with several additions. In their original form the articles attracted much attention, and we venture to think that in their expanded state they will be even more impressive. They deal with a variety of subjects, but all more or less connected by a leading idea common to them all. That idea is the necessity that exists in British agriculture, and we may add market-gardening generally, for combination and organisation of effort. Individual enterprise, under present conditions, is often wasteful and unremunerative.

It is unreasonable to complain of the railway companies because they have to look after their own interests, and cannot

deal with small parcels at the same rates that they do with large consignments. If growers would co-operate one with another, and so arrange their affairs that the railway companies could handle their produce in large quantities, at regular intervals, so as to secure economy of manipulation and adequate remuneration for their trouble, the companies would gladly undertake the transport of the goods from the grower to the markets. How this can be done is told in a very interesting manner in the book before us. We see there how little Denmark can afford to send us weekly huge consignments of butter, how enormous numbers of eggs are regularly sent from various Continental countries, and even from far-off Siberia; how Germany educates her people, establishes co-operative credit banks for the benefit of the farmers, and fosters every means of securing co-operation among the growers, and consequently at a much diminished outlay. A higher average in quality is secured by a system of inspection, by means of which inferior samples are eliminated and a general good average constantly maintained. By these means Denmark has outgrown the losses inflicted by the war with Germany, and is flourishing while our farmers are wringing their hands in despair.

From St. Malo, in the autumn of last year, no fewer than 773 tons of Blackberries were imported into this country. The fruits are collected by the women and children, brought into St. Malo, and sold to the exporter. About eight centimes per pound are paid to the pickers, the total sum accruing to them being estimated at no less than £5,541. At the lowest estimate a sum of £7,730 was paid for Blackberries brought to England from a single French port. We may well wonder whether Blackberries grow in England, Wales, Scotland, or Ireland; and if so, why our peasantry do not turn them to the same account that their French neighbours do. "Oh, it would not pay!" would doubtless be the answer; but if the figures and statistics quoted in this volume be correct, this reply is not adequate. A comparison of the rates charged from St. Malo to London, and from Devonshire and Cornwall, shows that, if sent in sufficiently large quantities, the railway charges are even more favourable than they would be from St. Malo.

Gooseberries are treated in like manner, and early Potatoes are grown to such an extent that in 1902 from the port of St. Malo alone Potatoes to the value of over £200,000 were exported, 1,000 tons a day being shipped during the season. The climate is not materially better than in our south-western counties or in south-west Ireland. Cauliflowers are in like manner exported in enormous quantities. Wheat-growing has largely been given up as unprofitable, but instead every imaginable source of profit is turned to account. One grower, we are told, exported to England in the year 1901 100 parcels of Parsley daily, each parcel being of the weight of 20 lb.

To show further how the French growers co-operate to capture the British market, the author gives a list of ten or a dozen syndicates formed for the express purpose of growing, collecting, and exporting to the British markets such produce as Strawberries (from Vauclose), Cherries, Pears,

Black Currants, Chasselas Grapes, Tomatoes, fruit and vegetables generally, Onions, Walnuts, flowers, Olives; and no doubt the list could very largely be extended. The syndicates combine to purchase seeds, manures, implements, at lower rates and of better guaranteed quality than they could obtain as individuals. They baffle the money-lender by establishing credit banks, from which they can obtain loans on reasonable terms; they help one another in cases of sickness or accident, they provide medical aid, old age pensions, and assistance for orphans; and in these and other ways they help one another, and do not burden the rates or live on charity.

Travelling teachers have done a great deal in stimulating the people and pointing out to them fresh sources of profit when circumstances have rendered the old ones no longer available. When the teacher is a well-educated, practical man, and has the opportunity of demonstrating the soundness of his teaching, the results, even in the most sluggish of villages, are satisfactory. From casual observations in Belgium we were enabled to judge of the value of this method of instruction long before our County Councils took up the subject; but it is evident success must depend especially on the qualifications of the teacher. A young scientist fresh from college is not likely to be listened to with respect; an ill-informed practical man is soon found to have few or no advantages that his auditory do not already possess. Education, instruction, combination of effort, energy, and enterprise seem to have very materially lessened in other countries the effects of the depressed condition of agriculture. There seems no reason why a similar conjunction should not have like effects here. Indeed, when we compare the state of horticulture in general with that of agriculture, it would seem as if the farmers had much to learn from the gardeners.

GLORIOSA GRANDIFLORA (see Supplementary Illustration).—Under its synonym, *G. Leopoldi* (*Methonica Leopoldi*), Mr. C. G. van Tubergen, Jun., Zwanenburg, Haarlem, sent a specimen of *Gloriosa*, from which our Supplementary Illustration was taken, and which is said to have been imported from the Congo, Africa. It has flowered in various gardens in this country of late years, and flowers of several forms of it have been received, all exhibiting the same light-yellow colour which as the flowers pass off is tinged more or less with pale purple. In the undulation of the segments also there is considerable variation. Most authorities include *G. grandiflora* under *G. virescens* (*simplex*), but for garden purposes it is desirable to separate it. All the species thrive well in a warm greenhouse or plant-stove if potted into large pots in spring and trained round stakes or to supports on the roof of the house. After growth is matured and the foliage has turned yellow, the plants should be dried off, and kept in their pots in a rather lower temperature than they have been grown in, receiving no water until growing time again comes round, when they should be turned out and potted into comparatively small pots. When growth commences an ample shift into the flowering-size pots should be given, and the plants placed in the positions they are to occupy. This species recently flowered at Kew, where it is known as *G. virescens* var. *grandiflora*. The form of the flower, however, is intermediate between *G. superba* and *G. virescens*, and its yellow colour gives another distinguishing feature. J. O'B.

* *The Organisation of Agriculture*. By Edwin A. Pratt. (John Murray.)

THE DAHLIA SHOW AT THE CRYSTAL PALACE.—By reference to an article in the *Gardeners' Chronicle* for May 28, 1904, p. 344, it will be seen that the Dahlia has been generally cultivated in English gardens for one century. On May 20, 1804, seeds of Dahlias were received in London by Lady HOLLAND, and these were raised and flowered the same year. Since that date Dahlias have been uninterruptedly cultivated in this country. The type most popular at the present time is that known as the "Cactus-flowered," all the varieties of which have been raised since the introduction of the variety *Juarezii* from Japan a quarter of a century ago. More than ordinary interest therefore attaches to the recent show, taking place as it did immediately after the plants have been subjected to one hundred years' cultivation in Britain. The first English-raised double-flowered variety appeared in 1805, and afterwards there began the development of the type we now know as the "Show" Dahlia, which for gardens and decorative purposes at least is rapidly losing favour. A detailed report of the exhibition will be found on p. 193; but it may be added here that of the eleven awards granted by the Society to new varieties nine were conferred on members of the Cactus-flowered type.

WASP STINGS.—Wasps are so numerous in some gardens this season it may be well to remind our readers of a very effective and old-fashioned means of overcoming the sensation of smarting left by the sting of these insects. We refer to the juice of an Onion, the application of which is of the simplest character. As soon as the sting is felt, procure an Onion, and having cut off a slice, rub it upon the affected part.

MIDLAND DAFFODIL SOCIETY.—We have received a copy of the Annual Report of this Society for 1904, and the schedule of prizes it is intended to offer at the exhibition to be held in the Edgbaston Botanical Gardens in 1905. The balance-sheet shows that the Society's finances are satisfactory. A very successful exhibition was held on April 26 and 27, at which there were 143 entries, made by thirty-six exhibitors. The pamphlet includes a report of the speeches made at the dinner, and of an interesting discussion that took place upon the "Classification of Daffodils." Copies can be obtained on application to Mr. H. SMITH, Tenby Street, Birmingham.

SIR JOSEPH DALTON HOOKER.—An excellent photograph of this eminent botanist, who, as stated on p. 10, attained to his eighty-seventh birthday on June 30, is issued as a supplement to the September number of the *Journal of Botany*.

WEBSTER'S "PRACTICAL FORESTRY."—The third edition of *Practical Forestry*, by Mr. A. D. WEBSTER, has been exhausted, and a fourth will soon be issued by the publishers, WILLIAM RIDER & SON, of the *Timber Trades Journal*. The whole work will be carefully revised and brought up to date, and several important chapters added, particularly with reference to afforesting waste lands, and the education of foresters, on both of which subjects Mr. WEBSTER gave important evidence last year before the Departmental Committee on Forestry of the Board of Agriculture.

GARDENERS' OUTING.—On Saturday, September 3, members of the Walsall Horticultural Society and the Cheslyn Hay and Great Wyrley Horticultural Society visited the Nurseries of Messrs. BAKER, Ltd., Codsall, near Wolverhampton. Altogether there were 120 persons; and the party was shown over this new establishment by Mr. T. G. BAKER, after which a luncheon was served on the upper floor of the seed warehouse. On September 5 members of the Wolverhampton Horticultural Club visited the same nurseries.

"BOTANICAL MAGAZINE."—The September number contains coloured figures and descriptions of the following plants:—

Rosa gigantea, Collett, t. 7972, see *Gardeners' Chronicle*, 1889, II., p. 12, f. 4. Flowered in the Duke of Northumberland's garden at Albury.

Dischoriste Hildebrandtii, Lindau, t. 7973, a tropical African Acanthaceous shrub with greyish ovate, shortly-stalked leaves and lilac two-lipped flowers; the lower lip is marked with purplish streaks. Kew.

Dendrobium Williamsoni, Day and Reichenbach fil., in *Gardeners' Chronicle*, 1869, p. 78. Identified by M. Rolfe, by comparison with the drawing from the type specimen in Mr. DAY's collection now at Kew, so that it is not necessary in this case to await the opening of Reichenbach's collection now, according to the extraordinary dispositions of the testator, sealed up in Vienna! The flowers are fawn-coloured, the lip having an orange blotch. Native of Assam.

Pyrus Niedzwetzkyana, Hemsley, t. 7975; see also *Gardeners' Chronicle*, 1891, I., p. 461, as *Malus Medwetzkyana*. A native of South-western Siberia, with deep rosy-lilac-coloured flowers, and conical, crimson fruit of medium size, the flesh also being red. Kew and hort., Ellacombe. The variation in the spelling is due to the author himself.

Moraea Thomsoni, Baker, t. 7976. Native of tropical East Africa; flowers stellate, pale lilac, leaves linear. Kew.

ADMIRAL G. PARKER, whose death took place at Delamore, Cornwood, S. Devon, on the 30th ult., at the age of seventy-seven, was an enthusiastic horticulturist. He was an exhibitor of Chrysanthemums at the London shows, and helped by subscribing liberally and by exhibits to make many local shows in Devonshire successful. He was also a generous supporter of the Devon Daffodil and Spring Flower Show.

GARDEN CITY ASSOCIATION.—Many of our readers may be interested in the following letter:—

"Allow me to draw the attention of your readers to a Conference on Small Holdings, which will be held under the joint auspices of the Garden City Association and First Garden City, Ltd., on the latter's estate near Hitchin, on Saturday next the 10th inst. Mr. H. RIDER HAGGARD has consented to preside, and will be supported by Mr. Alderman WINFREY, of Peterborough, whose interest in small holdings is well known. A paper will be read by Mr. THOMAS ADAMS, manager of the Garden City Ltd., on 'The Garden City Movement in Relation to Agriculture,' and a discussion will follow, in which it is hoped many who are experts upon this subject will take part.

"It is perhaps not generally realised that this is an important feature of the Garden City undertaking, whose object it is not only to arrest urban overcrowding, but also rural depopulation. The subject is too large a one for even brief treatment in a letter such as this, but we shall be greatly obliged if you will give publicity to the fact of the forthcoming Conference, in order that we may have the pleasure of sending a detailed programme and full information as to train service, &c., to those of your readers who may desire to attend. I shall be pleased to receive any enquiries at this address, and to furnish all further particulars.

"G. J. H. NORTHCROFT, *Secretary*,
"345, Birkbeck Bank Chambers, Holborn, London, W.C.
"September 2."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

VALLOTA PURPUREA.—With reference to the remarks at p. 172, in the issue for Sept. 3, that the light-coloured and white forms of *V. purpurea* have been found to be very delicate, it may be said that in many gardens where the ordinary form is grown in quantity as decorative plants and for cutting (for both of which purposes the plant is eminently suited), it has acquired a reputation for dying out in the course of three or four years, the bulbs gradually degenerating after the second year. When first my attention was called to the matter, I could not understand why in certain gardens there were large specimens of *Vallota*

purpurea which had been there many years, blooming well annually, and with no trouble taken with them, while in others the much-desired stock degenerated. I came to the conclusion that in the case of the healthy specimens the neglect of the annual repotting to which the large batches of plants in the gardens where they were grown for decorative purposes were subjected was the chief point of difference, and as I knew from experience that frequent repotting caused the loss of many other African bulbs, surmised that this, to a great extent, was the explanation. I referred the matter to a friend in South Africa, and he informed me that *Vallota purpurea* when cultivated there invariably died if disturbed often at the root, but was always safe when kept in the same pots for as long as possible. In borders too he said they generally disappeared after a time, but if planted in confined spaces in rockeries they formed dense masses. Now that the white variety has again appeared these remarks may be useful. I advise that it be not "nursed" or repotted. Let it get pot-bound and off-sets will form. Another source of weakness in African bulbs of this class is the neglect of a dry resting season. The deciduous bulbs want no water after the leaves turn yellow, and the evergreen species but little. A period in the open-air in summer is also very beneficial. Finely sifted soil is bad for any of these bulbs, fibrous loam and peat mixed with sand are best for them. *Vallotas* are cool greenhouse plants, and any attempt to grow them in a warm, moist house or frame must result in their loss. James O'Brien.

HAWFINCHES.—Noticing Mr. J. Pentland's remarks in the issue for August 27 on the trouble caused by hawfinches and bluecaps, I have pleasure in recommending an easy and most effectual remedy. No man could have been more worried with them than I was for many years, but this is not the case now. I constantly keep among the rows of Peas some steel rat-traps, sinking them just level with the soil, but not covering them, and place some shelled Peas under the plate. Every hawfinch that visits the Peas is sure sooner or later to find the bait, and be caught, generally alive, by their strong bills. For the smaller birds, such as tits and sparrows, the smaller mouse-trap is more suitable. Half-a-dozen traps, if watched and re-set frequently, will catch scores in a week or two, and the great annoyance of seeing rows of Peas with empty shells hanging will occur no more. F. S., *Leyburn R.S.O.*

NEW VARIETIES OF HEMEROCALLIS.—Towards the end of last year I received from Herr Carl Sprenger, of Vomero, near Naples, his set of four new hybrid *Hemerocallis*, which were described by him at length in these columns on August 15 of last year, the reading of which descriptions made me desire to acquire and grow them. I have now seen them all bloom well in my own garden, and am greatly disappointed with them in every way. They may be divided into two distinct lots—one consisting of the variety named *Parthenope* (of which, if I remember rightly, the raiser seemed to have the highest opinion, and of which I think the least of the lot, as it has nothing novel about it, and is, in fact, indistinguishable from another hybrid received from Lemoine, of Nancy, under the name of *luteola*), and three named respectively *Mulleri*, *Baroni*, and *ochroleuca*, which are so like one another as in my opinion to be unworthy of separate names. They are all of pale straw-colour, like one of their parents, *H. citrina*, and show little or no trace of the other parent. W. E. Gumbleton.

FRUIT-GROWING.—Mr. Miller, on p. 174, has criticised an article of mine which originally appeared in the *Madresfield Club's Quarterly Magazine*. Everyone can appreciate criticism, provided that such is based upon facts that I have been previously plainly stated. Mr. Miller's criticisms are unfair, for he has misconstrued the facts that I stated and substituted inferences. Least of all did I say that £100,000 is annually realisable from fruit-trees when skilfully planted, &c. I cannot for one moment imagine that Mr. Miller thought so when he wrote, "In the absence of such qualifying information we presume we are right in putting that interpretation upon it,

thus yielding a most princely income," &c. Now it is this very absence of qualifying information that proves the distinction and the difference. I believe that if Mr. Miller was sent for professionally to assess the actual current value of growing trees as they stood, whether timber or fruit-trees, his judgment would be based upon both a present and a prospective estimate, but certainly not by any form of multiplied returns. The object of my original letter was to show that our experiment to convert ordinary farmers into successful fruit-growers had absolutely failed; which is much to be regretted, seeing that the interests of all parties were made as nearly mutual as possible. Besides, there was no question of "fixity of tenure" or other obstacle in the way. In this particular we are, like Mr. Miller, "wiser after the event." A different scheme is now in perspective, and we hope for better results; but time will prove. When the project is fully matured and in working order, we shall be pleased to give Mr. Miller some more statistics, for I am sure Earl Beauchamp or his tenantry will not have any desire to keep any fruit-growing secrets to themselves, so as to selfishly obtain the enormous advantage referred to by Mr. Miller. It is often said, and evidently with much truth, that anything that costs one nothing is not appreciated, and seldom succeeds. This has doubtless been one of our greatest stumbling-blocks in the past in the matter of giving trees gratuitously. *William Crump, Madresfield Court.*

POTATO ELDORADO.—In the spring of the present year, Mr. Henry Drew, of Peamore, near Exeter, planted in good Potato soil in his garden three sets made out of a tuber which weighed 5 oz. He put out the plants at distances of 3 feet from each other. On August 25 the crop was lifted. There were 18 lb. of good saleable-sized tubers, many of them large, some weighing over half a pound each; also 2 lb. of small tubers. There was not a diseased tuber in the lot, nor was there any sign of disease in the haulm, which was strong and tall. The crop works out at 64 lb. return for 1 lb. planted. The tubers were oval kidney-shaped, some slightly rough in the skin, white, and to all appearance of fine quality. Near the Eldorados were some Northern Star Potatoes. On digging a trial plant or two, it was noticed that the proportion of small tubers was considerable, much exceeding the proportion prevailing in the Eldorado. *A. H.*

A WONDERFUL PEAR-TREE.—In my garden there is an old tree of the variety Williams' Bon Chrétien. It is at least fifty years old. A foot from the ground it has a girth of 4 feet 2 inches. This Pear-tree has never failed to fruit abundantly, excepting last year, when a late frost destroyed the Pear bloom almost everywhere. During my occupation of this place, up to and including 1902, the yield of fruit was abundant. It sufficed for the house and for friends, and also for blackbirds and starlings. This year the show of bloom was phenomenal, yet the crop of fruit is a very poor one. *E. Bonavia, M.D., Worthing.*

NECTARINE HUNT'S TAWNY.—Being in the neighbourhood of East Grinstead last week, I called on Mr. Clarke, fruit-grower and nurseryman. Mr. Clarke has some fine Peach-trees under glass; he has sent to Covent Garden this season 11,000 Peaches. In his long span-roofed Peach-house are two trees of Hunt's Tawny Nectarine. The crop of these two trees has realised £33. Anyone about to plant for market purposes ought to make a note of this fine Nectarine, the demand for the fruit being unlimited. *W. F. Bowman, 25, Cambridge Street, Tunbridge Wells, Aug. 29.*

SCARLET RUNNER BEANS AND BEES.—Your correspondents, on p. 175, believe that bees have spoilt their crops of Scarlet Runner Beans. I think they will have to seek another cause. During this season we have had about fifty strong stocks of bees in various parts of the gardens, and being an agricultural rural district, bumble-bees are also very numerous, yet in spite of these facts we never had better Scarlet Runners. Our principal row was 70 yards in length, and the plants are 10 feet in height. Half the row was planted with Sutton's A1, and the remaining half with Sutton's Scarlet. We have had and still have an abundance of Beans. The seeds were sown on April 7, and on the approach of the

great drought I mulched them with manure from a spent hot-bed. I think the cause of failure in the cases mentioned on p. 175 were those thirteen consecutive cold nights recorded by your West Herts correspondent, Runner Beans being very sensitive to cold nights. *R. M., Newbury, Sept. 6, 1904.*

— I was surprised to see in last week's issue such poor accounts of Runner Bean crops. I think if gardeners would syringe their Beans each night and morning in hot weather, in addition to applying plenty of water at the roots, they need not fear bumble or other bees. Although the flowers on my Beans have been riddled with holes made by bees, I have never failed to get good sets. Beans, Celery, and Tomatos should never be allowed to have their roots dry, from the time the seeds are sown until they are gathered. I enclose a sample of Beans for inspection. The variety is Cannells' Exhibition. *A. M. P., Chesham.* [A very fine sample showing that almost all the flowers set well. *Ed.*]

— With reference to Mr. J. W. Miles' remarks on p. 175 concerning Runner Beans, "that the high temperatures recorded this season are the cause of their failing to set," and that this is not due to bumble-bees piercing the calyx, I am forwarding a few flowers for your inspection; and you will find that almost every flower, except those in the early stages of growth, are pierced close to the calyx. I have watched very closely, and find that the bumble-bees make no attempt to get into the centre of the flower, but make for the same part on the outside of every flower they alight on. *T. Rennie, Hopwood Hall Gardens, Middleton.* [Many of the flowers were undoubtedly pierced in this manner. *Ed.*]

BOWKERIA TRIPHYLLA.—There is now in flower, in a garden on the undercliff of the Isle of Wight, the very rare and interesting Cape shrub *Bowkeria triphylla*. The flowers in form are somewhat like a *Calceolaria*. The plant is figured by Harvey in the first volume of his *Thesaurus Capensis*, on plate 37. *W. E. Gumbleton.*

GLADIOLUS PRIMULINUS.

This tall-growing species of *Gladiolus* (fig. 74) was shown by Francis Fox, Esq., Alyn Bank, Wimbledon, at a meeting of the Royal Horticultural Society on the 23rd ult., where it attracted considerable attention. The peduncles are from 2 to 3 feet in height, bearing six or more primrose-yellow-coloured flowers, the posterior segments of which forms a hood over the essential organs. The plant is found in the immediate neighbourhood of the Victoria Falls, on the River Zambesi, the spray of the Falls completely covering the plant at times, and obtaining for it the name of "Maid of the Mist." The species was first described by Mr. J. G. Baker in the *Gardeners' Chronicle* for August 2, 1890, p. 122, and only differs from *G. Quartianus*, figured in the *Botanical Magazine*, t. 6739, in the colour of the flowers. Further particulars were given in the *Gardeners' Chronicle*, August 27, 1904, p. 155.

PUBLICATIONS RECEIVED.—*Journal of the Department of Agriculture of Western Australia*, July. Contents: Silver Eyes (*Zosterops Gouldi*); these birds seem doomed to extinction for their alleged ravages upon Grapes; Report on State Farm, Hamel; Trial Shipment of Grapes to England (not very satisfactory); Ear-cockle (*Tylenchus tritici*) in Wheat, &c.—*Agricultural Bulletin of the Straits and Federated Malay States*, June. Contents: Introduction of the Cotton Industry into Netherlands-India, by Dr. K. W. Tromp de Haas; Market Reports, Meteorological Returns, &c.—*The Agricultural Journal of the Cape of Good Hope*, August. Contents: Rural Cape Colony, illustrated (continued); Codlin Moth, Grasses for Trial in Cape Colony.—*The Agricultural Gazette of New South Wales*, July. Contents: Work with the Peach aphid (*A. persicae niger*); W. Froggatt; Useful Australian Plants (*Eragrostis Brownii* and *E. diandra*); J. H. Maiden; A New Weed (*Collomia grandiflora*); Notes on Forestry, Orchards, &c.—*Transactions of the Massachusetts Horticultural Society* for 1903, Part II. Notices the exhibitions held under the Society's auspices, and much useful work done with regard to School Gardens.—From the United States Department of Agriculture, Bureau of Plant Industry, Bulletin No. 61: *The Avocado in Florida*, its Propagation, Cultivation, and Marketing, by P. H. Rolfs; Bulletin No. 62, *Investigations of Rusts*, by Mark Alfred Carleton, and Bulletin No. 63, *Notes on Egyptian Agriculture*, by George P. Foaden. All these three are well illustrated.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 6.—The usual fortnightly meeting of the Committees was held on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. A better display was made than that on the previous occasion, and the Hall was moderately furnished with exhibits throughout. At the same time there were obvious indications that the holiday season still reigns, and the number of visitors to the Hall was therefore comparatively small.

THE FLORAL COMMITTEE recommended seven Awards of Merit to new varieties of flowering plants, including four varieties of Dahlia, a double-flowered tuberous-rooting Begonia especially valuable for massing in beds, a variety of Pink, and a hybrid Campanula obtained from *C. pyramidalis* and *C. carpathica*. The principal groups before this Committee were composed of Cannas, Roses, herbaceous Phlox, tuberous-rooting Begonias, Ferns, and hardy flowers.

THE ORCHID COMMITTEE recommended one Botanical Certificate and one Award of Merit.

The only novelty that gained an Award from the FRUIT AND VEGETABLE COMMITTEE was a new variety of Raspberry.

At a meeting in the afternoon there were eighteen new Fellows admitted to the privileges of the Society, and a Lecture on "Gourds" was given by Mr. ODELL.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. C. T. Drury, H. B. May, R. Dean, J. F. McLeod, R. Hooper Pearson, Jno. Jennings, Jas. Hudson, C. R. Fielder, Chas. Dixon, W. Bain, C. E. Shea, A. Perry, W. Cuthbertson, Geo. Nicholson, C. E. Pearson, J. W. Barr, R. C. Notcutt, H. J. Jones, W. P. Thomson, E. H. Jenkins, W. J. James, Ed. Mawley, Geo. Paul, Chas. Bick, and W. Howe.

Messrs. H. CANNELL & SONS, Swanley, Kent, set up a magnificent group of Cannas in all the newer and finer varieties, arranging the plants in a semi-circular group. The variety J. B. van der Schoot has large yellow flowers, pleasingly marked with scarlet spots; Oscar Dannecker has large flowers of a reddish-orange colour, merging to yellow at the margins. C. Molin, Niagara, Miss Amy Ker, Comte Reine Claude Brailles, Duke Ernest, R. Wallace, and Jean Tissot are but a few of the best varieties in this commendable collection. (Silver-gilt Flora Medal).

Although it is late in the season for Roses, a very charming display of these flowers was shown by Mr. GEO. PRINCE, Longworth, Berks, in vases, epergnes, trays, &c. The varieties White Maman Cochet and Mildred Grant were shown well. *Rosa pomifera* was shown in fruit; the fruit resembles ripe Gooseberries. Fruits of *Rosa rugosa* were used as an edging (Silver-gilt Banksian Medal).

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, staged a collection of Ferns running the entire length of one of the outer tables. This exhibit contained well-grown specimens of many of the rarer and more interesting species, including several of the coloured section—*Gymnogrammas*—gold and silver forms; *Adiantum macrophyllum*, *A. m. albostratum*, *A. Farleyense*, *Lomaria L'Herminieri*. Among the more noticeable plants were *Platyterium Hillii*, *P. Veitchii*, &c. (Silver Banksian Medal).

Mr. H. B. MAY, Dysons Road Nursery, Upper Edmonton, staged a miscellaneous group of Ferns, various greenhouse plants, *Bouvardia*, *Veronica Hendersonii*, &c. *Gymnogrammas* were shown well—*G. grandiceps superba*, *G. Wettenthaliana*, *G. Mayii*, &c.

Messrs. W. M. BULL & SONS, King's Road, Chelsea, exhibited foliage plants, including *Cyanophyllum magnificum*, *Talisia princeps*, *Davidsonia puriens*, *Phyllostenium Lindenii*, *Dracaena* in variety, &c.

Tuberous-rooting Begonias were shown by Messrs. BLACKMORE & LANGDON, Twerton Hill Nurseries, Bath. Several baskets contained the free, smaller-flowering varieties used for bedding purposes (see "Awards"). A number of flowers of the larger type, in single and double varieties, of the most beautiful shades of colour were also staged by the same firm. (Silver Flora Medal).

Mr. AMOS PERRY, Winchmore Hill, London, N., staged an extensive collection of hardy flowers,

comprising most of the showier members in flower at this season.

Messrs. JOHN PEED & SON, West Norwood, London,

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colechester, staged several species of Liliums, vases of Tritomas, Gladioli, Asters, Colchieums, Gazanias, &c.

Messrs. BARR & SONS, 11, 12, and 13, King Street, Covent Garden, London, set up a collection of herbaceous flowers — Gladioli, Antirrhinums, Liliums, Kniphofias, &c. We noticed a fine batch of Vallota purpurea. A number of pot plants of the Chinese Aster included many pretty and useful forms of these summer bedding plants. Several hardy Nymphaeas were displayed in trays.

Messrs. R. & G. CUTHBERT, Southgate, staged an extensive exhibit of Liliun longiflorum, arranging their plants on the floor of the Hall.

Messrs. GUNN & SONS, Olton, Birmingham, staged vases of bloom of Phlox decussata, massing the bunches to form literal banks of colour. The size of the individual flowers was good, and the colours were well developed. The group would perhaps have been more effective if displayed in a lighter and more artistic manner (Silver Flora Medal).

Mr. B. LADHAMS, the Shirley Nurseries, near Southampton, presented vases of hardy Lobelias, perpetual-flowering Pinks (see Awards), and Gaillardias. The Gaillardias were shown in fine character, and of various shades of yellow colour, &c.

DAHLIAS.

Several new Pompon Dahlias were presented by Mr. CHAS. TURNER, Royal Nurseries, Slough. The variety Queen of Whites is a good one, San Toy (having petals tipped with magenta), and others were attractive.

Mr. H. SHOESMITH, Westfield, Woking, Surrey, also sent several seedling Cactus Dahlias, including Jeanette (a pleasing yellow), W. Hopkins (see Awards), F. Wellesley (white), &c.

Messrs. J. STREDWICK & SONS, Silver Hill Park, St. Leonards, staged nine new Dahlias, all of the Cactus type, including J. B. Riding (see Awards), Ella Kraemar (pleasing refined flower of rosy-pink colour), Fairy (white) (see Awards), Thomas Parkin, &c.

Mr. S. MORTIMER, Farnham, Surrey, exhibited several new Cactus Dahlias. Vivid is a very bright scarlet flower, Alexander is also a good flower (dark-crimson), Starlight is of pleasing pink colour, the flower standing well above the foliage.

Messrs. CHEAL & SONS, Crawley, exhibited Dahlias of Pompon, Cactus, and Single-flowered types. Of the Pompon varieties, Madeline, Nerissa, Cyril, and Queen of Whites were commendable. Several stands contained flowers of the Cactus type—Dainty (a pleasing flower), H. F. Robertson (good yellow), Orion (new), &c. A tray of single Dahlias also contained some effective flowers (Bronze Flora Medal).

MISCELLANEOUS.

Three new varieties of Begonia Rex were shown by Messrs. SANDER & CO., St. Albans. That named Mrs. H. G. Moon has very pleasingly marked leaves.

Sir TREVOR LAWRENCE, Burford, Dorking, sent three large inflorescences of Ixora macrothyrsa (Duffi). The heads of flowers were nearly 18 inches in diameter, and the colour bright scarlet (Cultural Commendation).

Messrs. W. WELLS & Co., Ltd., Earlswood, Redhill, set up a number of vases of early-flowering Chrysanthemums in many pleasing colours. September Gold, a new variety, is commendable, being of a deep yellow colour, and having large, compact blooms.

Messrs. JAMES CARTER & Co., High Holborn, London, exhibited flowers of their Empress strain of Petunias on boards, relieved with sprays of Maidenhair Fern.

Mr. DAVID RUSSELL, The Essex Nurseries, Brentwood, staged a collection of Erias in pans and baskets, together with well-berried plants of Berberis vulgaris, Cotoneaster microphylla, &c.

G. BAXTER, Esq., Hutton Park, Brentwood (gr., Mr. H. Holloway), exhibited a grand specimen plant of Davallia fijiensis, growing in a large tub (Cultural Commendation).

Messrs. J. VEITCH & SONS, Chelsea, staged a well-flowered batch of Dedaalacanthus parvus.

AWARDS OF MERIT.

Tuberous-rooting Begonia Argus.—A bright scarlet-coloured Begonia of compact and free-flowering habit. The plants throw their double flowers well up to view, and hold them erect without any support. It will make a very effective variety for planting in beds. The female flowers, as is usual, are single. From Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath.

Campanula × *Fergusonii*.—This is a garden hybrid between *C. pyramidalis* and *C. carpathica*, and resembles the former in habit, but is dwarfier in growth, being about 18 inches in height. The flowers are of bright but rich lilac colour, being intermediate between those of the two parents. The petals are more pointed



FIG. 74—GLADIOLUS PRIMULINUS: COLOUR OF FLOWERS PALE YELLOW. (SEE P. 190.)

also staged a large group of herbaceous flowers, and presented several trays containing pot plants of dwarf succulents, Saxifragas, Herniaria glabra, &c., suitable for the rockery and for bedding purposes.

A basket of Sternbergia lutea major, with flowers of deep yellow colour, was very noticeable. A fine spike of Watsonia rosea, and flowers of Crinum Powellii were prominent (Silver Banksian Medal).

than those of *C. carpathica*. From G. FERGUSON, Esq., Weybridge.

Dahlia (Cactus) Fairy.—A white flower with slight greenish-yellow centre; small in size, of excellent shape, and true cactus character.

Dahlia (Cactus) J. B. Riding.—One of the most distinct of the new varieties of the present year; colour bright orange-salmon with yellow centre; a large and attractive flower. The two foregoing varieties were from Messrs. J. STREDWICK & SON, Silverhill, St. Leonards.

Dahlia (Cactus) Wm. Hopkins.—One of the best dark-coloured varieties of the season; colour bright crimson slightly shaded in the centre with maroon. A highly refined flower of true Cactus shape, in which all the florets are handsomely quilled. From Mr. H. SHOESMITH, Florist, Woking.

Dahlia (Pompon) Edina.—A small, compact, and finely-formed flower, of a rich and bright yellow colour with slightly darker shading in the centre. From Mr. C. TURNER, Royal Nurseries, Slough.

Pink, Florence.—A variety of Pink which is said to bloom through several months of the year. The flowers are white, with a dark crimson centre; the florets are slightly toothed, fragrant. The variety is described as of very free-blooming habit, but only cut specimens were shown. From Messrs. B. LADHAMS & SON, Shirley Nurseries, Southampton.

Orchid Committee.

Present.—Harry J. Veitch, Esq., in the Chair, Baron Shroeder, Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. Ballantine, J. W. Potter, W. Boxall, W. H. Young, J. W. Odell, H. A. Tracy, T. W. Bond, G. F. Moore, J. Douglas, H. Little, and W. A. Bilney.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for an interesting and effective group of showy hybrid *Laelio-Cattleyas*, *Laelias*, &c. made up of several good forms of *L.-C.* × *blechleyensis* and *L.-C.* × *callistoglossa*, the handsome light-rose, fringed-lipped *L.-C.* × *Mad. Chas. Maron* (*C. Warscewiczii* × *L. Digbyana*), *L.-C.* × *splendens*, *L.-C.* × *Bryan*, *L.-C.* × *Nysa*, *L.-C.* × *Haroldiana*, *L.-C.* × *Parysatis*, *Cattleya* × *Pittiana*, *Laelia* × *Pacavia*, *Cypripedium* × *H. Ballantine*, &c.

Messrs. SANDER & SONS, St. Albans, secured a Silver Flora Medal for a varied group of hybrids and species. Among the latter were four good specimens of *Phalenopsis Esmeralda*, bearing collectively a dozen elegant spikes of rose-coloured flowers; a singular *Lycaste*, with long, narrow, brownish sepals and cream-white petals and lip, allied to *L. Schilleriana*; the fringed-lipped *Chondrorhyncha Chestertoni*, *Brassia verneosa*, *Calanthe veratrifolia*, and several forms of *Cypripedium* insigne, that named "Emerald" having a distinct apple-green-coloured upper sepal, with large purplish-brown blotches. The hybrids included several varieties of *Laelio-Cattleya* × *callistoglossa*, *L.-C.* × *Hy. Greenwood*, *L.-C.* × *blechleyensis*, *L.-C.* × *blesensis*, *Cypripedium* × *Memnon*, and an effective unnamed hybrid resembling *C.* × *Harrisianum*, but with the bright rose-tinted dorsal sepal of *C.* × *enanthum*.

The Hon. WALTER ROTHSCHILD, M.P., Tring Park (gr., Mr. A. Dyre), was awarded a Silver Banksian Medal for a group of pretty and curious *Masdevallias*, &c., including *M. maculata superba*, a decided improvement, if not specifically distinct from the smaller type; the velvety-purple *M. melanoxantha*, *M. intraeta*, *M. vespertilis*, *M. Peristeria*, *M. Burbridgeana* (see Awards), *Restrepia leopardina rosea*, *R. striata*, *R. elegans*, *Aëranthus zygopetaloides*, the bright reddish-scarlet form of *Laelia flava*, the very extraordinary *Nanodes Mantinii*, and an inflorescence of the rare and showy *Bulbophyllum Ericssonii*.

Messrs. HUGH LOW & CO., Enfield, secured a Silver Banksian Medal for a good group, including *Phalenopsis violacea* Low's variety, in which the labellum is almost entirely of a bright violet colour; *P. denticulata*, cream-white barred with cinnamon-brown; the pink *P. Sanderiana*, and *P. Esmeralda*; a good, slightly spotted *Odontoglossum crispum*, with twenty flowers on a spike; *Cattleya Gaskelliana alba*, *C. eldorado enfieldensis*, *C. granulosa*, and two forms of *C. Grossii*, the larger being a fine flower with dark brown sepals and petals spotted with purple on the tips, and very broad rose-purple labellum. Also in the group were *Dendrobium Phalenopsis Schroederianum*, and a very distinct bluish-white form of it; *Aerides Lobbi*, *Laelio-Cattleya* × *Ingramii*, &c.

J. GURNEY FOWLER, Esq., Glebeclands, South Woodford (gr., Mr. J. Davis), showed *Cypripedium* × *Transvaal superbum* with very fine and richly-marked

flowers, and cut examples of the very handsome *C.* × *l'Ansonii*, *C.* × *Veitchio-Morganie*, and *C.* × *callo-Rothschildianum*.

GURNEY WILSON, Esq., Glenthorne, Haywards Heath, showed an imported piece of *Cattleya Loddigesii* with two pseudo-bulbs, the leading one of which had produced a splendid inflorescence of ten large, bright rose-pink flowers.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), showed *Cattleya* × *Pittiana* "Marshal Oyama" (*granulosa* × *Dowiana aurea*) with cream-white flowers tinted with rose and with a rose-purple labellum.

R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith), sent *Zygopetalum* × *Max-Jorisi* (*Maxillare* × *Jorisanum*), the flowers of which have narrow segments; the sepals, petals, and column are green marked with brown; lip white, with blue at the base.

Captain G. L. HOLFORD, Westonbirt (gr., Mr. Alexander), showed the fine *Zygo-Colax* × *Wiganianus*, Westonbirt variety, similar to *Z. W. superbus*, illustrated in the *Gardeners' Chronicle*, March 8, p. 156. Sepals and petals finely marked with chocolate-purple; lip violet-blue with some white markings.

AWARDS.

AWARD OF MERIT.

Cattleya × *Iris*, Westonbirt variety (*bicolor* × *Dowiana aurea*), from Captain G. L. HOLFORD, C.I.E., Westonbirt, Tetbury (gr., Mr. Alexander). A very distinct form of this favourite hybrid, three varieties of which, all with bronzy sepals and petals, have previously received awards. In the Westonbirt variety the sepals and petals are greenish-white, delicately tinged and slightly veined with rose. The showy labellum, which, as in the other forms, shows strong indications of *C. bicolor*, is bright rose-purple.

BOTANICAL CERTIFICATE.

Masdevallia Burbridgeana, Rolfe, from the Hon. WALTER ROTHSCHILD, M.P.—A distinct and pretty species, first flowered with Mr. F. W. Moore, A.L.S., in the Royal Botanic Gardens, Glasnevin, Dublin, and named in honour of Mr. F. W. Burbridge, M.A., Curator of Trinity College Garden, Dublin. The habit of the plant is that of a small *M. chimera*; its flowers are nearest to those of *M. Chestertoni*. The perianth is greenish-yellow irregularly marked with chocolate-purple, and studded with yellowish-white hairs, each segment being terminated by a purple tail an inch long. The ovate, saccate labellum is yellowish-white, with thickened, raised yellowish lines in the interior. It is a well-defined species, much stronger than *M. Chestertoni*, and producing an inflorescence as in *M. chimera*, from which, however, the flowers differ widely.

Fruit Committee.

Present: A. H. Pearson (in the Chair); and Messrs. F. Q. Lane, J. Jaques, Owen Thomas, E. W. Gilbert, H. J. Wright, G. Kelf, J. Basham, W. Pope, A. Dean, S. Mortimer, W. Bates, J. McIndoe, and Jos. Cheal.

Messrs. WM. PAUL & SON, Waltham Cross, brought an extensive collection of fruiting trees in pots, comprising Apples, Pears, Plums, Peaches, and Nectarines. The trees were well cropped and of clean appearance, forming altogether a meritorious group, although the fruits were a little lacking in colour, due probably to many of the varieties being somewhat immature. A collection of Apples was also displayed in dishes, in which were fine examples of Warner's King, Bramley's Seedling, Tyler's Kernel, Wealthy, Cox's Pomona, Bismark (excellent), The Queen, &c. (Silver-gilt Knightian Medal).

Twelve good dishes of early Apples came from the Castle Gardens, Highclere, Newbury (gr., Mr. POPE); also some grand specimens of Peasgood's Nonsuch, large and well coloured, with a fine bloom on the fruits. Among the dessert Apples were good examples of Duchess of Oldenburgh, Lady Sudeley, Beauty of Bath, Irish Peach, Quarrenden, &c.

In anticipation of the lecture several persons staged collections of Gourds, one from Mrs. BRIGHTWEN, The Grove, Stanmore (gr., Mr. Odell), being a very representative collection, including *Trichosanthes cucumeris*, *Lagenarias*, *Momordica* in several species, the interesting *Benincasa cerifera* with its white coating of wax, the *Luffa aegyptiaca*, *Cucumis myriocarpus*, the Gooseberry-Gourd, &c. (Silver Knightian Medal).

Another interesting exhibit of these fruits came from the gardens of HARRY J. VEITCH, Esq., East Burnham Park, Slough; also one from Captain SPEER, Sandown Lodge, Esher (Bronze Knightian Medal); and a small collection from the HORTICULTURAL COLLEGE, Swanley, Kent.

Adjoining the last-named exhibit was a very extensive collection of these curious fruits, shown by F. FERGUSON, Esq., The Hollies, Weybridge (gr., Mr. F. W. Smith) (Silver Banksian Medal).

Mr. GEO. KENT, Norbury Park Gardens, Dorking, sent a red-fleshed Melon named Norbury Park Hero.

A dish of Apples "Ottaway's Pippin" was shown by Mr. ARTHUR OTTEWAY, Swanley. The fruits are pale-coloured, medium sized, juicy, with a very crisp, sharp flavour.

Mr. GEO. PENWILL staged fruits and photographs of his new Raspberry "Penwill's Champion."

Mr. J. B. COLWILL, Sidmouth, presented a box of fruits and fruiting branches of Raspberry "Red Diamond" (see Awards).

Two new white Grapes came from Mr. W. ALDRIDGE, Teddington, and from Mr. E. W. GILBERT, Potsdam, Germany, respectively. That from Mr. ALDRIDGE, named "Edith Seedling," had small berries somewhat resembling those of Chasselas Napoleon, but possessed little flavour. The other Grape exhibited, "Drachenberger Seedling," was also poor in flavour, and in appearance was somewhat like the variety Buckland Sweetwater.

Mr. CHAS. ROSS, Welford Park Gardens, Newbury, presented two seedling Apples, and a Seedling Plum named Triumph. Of the Apples, the variety aptly named Ruddy is a large-sized fruit with strikingly high colour. This will be a useful variety for early purposes, as the fruits even at this early period were over-ripe and passed their best. Providing it has good cropping qualities, this variety should prove a valuable addition for early market purposes; its fine appearance would ensure for it a ready sale.

Mr. W. ROUFELL, Roupell Park, Norwood, showed a basket of Bietigheimer Apples. The large irregular fruits are of an unique pale rose colour (Cultural Commendation).

Messrs. JAS. VEITCH & SONS, Chelsea, staged a new Tomato, Gilbert's Seedling. The variety is a prodigious cropper, as was seen from the bunches exhibited, but the colour was not attractive, being dull red.

Another variety of Tomato was shown by Mr. H. SEWARD, Hanwell, named Hanwell Victory. This is an admirable type of this popular fruit, being of rich colour, good shape, desirable size, and a free bearer.

A dish of Runner Beans named Sydmonton Exhibition, was brought by Mr. LYE, Sydmonton Court, Newbury. This was an excellent type of Bean, the pods measuring 12 inches or more in length (Cultural Commendation).

AWARD OF MERIT.

Raspberry "Red Diamond."—A large conical fruit, of a deep-red colour, good in flavour, and useful for affording late supplies; a prolific cropper. Shown by Mr. COLWILL, Sidmouth.

LECTURE ON "GOURDS."

THE lecture on this occasion was one by Mr. J. W. ODELL, on the subject of "Gourds." The lecturer commenced by alluding to the mention of Gourds in Biblical history, and proceeded to speak of various interesting characteristics of these plants, particularly their apparent mimicry of other fruits, such as the Gooseberry, Apple, Orange, &c., the fruits of some of the Cucurbits being exceedingly similar in superficial appearance to the fruits named. Mr. Odell remarked that all the species and varieties of Cucurbitaceae cross with each other very readily, but he had been unable to obtain fertile seeds from any bigeneric cross, showing that if the genera are capable of crossing with each other it is a very difficult process.

The lecture was abundantly illustrated by thirty-six lantern-slides. Some of the first of these that were shown illustrated the manner in which Gourds are ornamented by dwellers on the South Coast of Europe, and in a different manner by the natives on the West Coast of Africa. The economic value of Gourds was shown by reference to the great variety of utensils made from them, and to the culinary uses they are put in America and other countries. Mr. Odell said since the new American and French varieties had been introduced, he thought that some of the Pumpkins and Squashes might be cultivated more commonly in England for the purpose of drying for consumption in winter. But the main purpose of the lecture was to draw attention to the value of Gourds for the decoration of the kitchen-garden, where they have a very attractive appearance, if trained over a pergola. Some species are suitable for cultivation in the stove, as may be seen in the warm Nymphaea-house at Kew. The fruits were recommended for use at Harvest Festival decorations, and Mr. Odell said that a few selected fruits arranged on a metal dish, and placed on the side-board in the hall of a dwelling-house, had a good effect. For the purpose of furnishing a pergola,

seeds should be sown in the first or second week in April. Pot off the seedlings into light soil, and after hardening them gradually, plant them into their permanent positions early in June, preferably in soil that is very rich and moderately light in character. If strong, sturdy plants are obtained by the commencement of June, it is possible to furnish completely a pergola of considerable size during the season, and the variety in colour and form exhibited by the suspended fruits will be most attractive. Mr. Odell showed a number of lantern slides prepared from photographs, in order to illustrate the effect the plants have in the positions for which he recommended them. One of these was similar to the illustration at fig. 75, which is reproduced from a photograph taken in the Cambridge Botanic Gardens.

ment of the flowers. No fewer than eleven novelties were recognised by the Committee, and of these nine were of the Cactus type.

The attendance on the first day was very small, and it is to be regretted that greater support is not given to the Society, whose influence is exerted towards the development and improvement of this showy flowering plant.

NURSERYMEN'S SECTION.

Show Dahlias.—In the Class for forty-eight distinct varieties of *Show Dahlias* there were three entries. Mr. S. MORTIMER, Swiss Nursery, Farnham, Surrey, winning 1st prize with a splendid collection of blooms, including the varieties Perfection, Standard, Reliance, Chieftain, Miss Cannell, Geo. Rawlings, Jos. B.

crimson), Countess, T. S. Ware, Mr. John Down (an unique scarlet sport, tubes of the petals very restricted), Duchess of York, Diadem, Maud Fellowes, Excellent, Southern Queen, Shirley Hibbard, &c. Mr. G. HUMPHRIES, Kingston Langley, Chippenham, was 2nd, prominent among whose collection were Mrs. Gladstone, Diadem, Perfection, Duchess of York, and Arthur Rawlings. Mr. M. V. SEALE, Vine Nurseries, Seven-oaks, was 3rd. There were five exhibitors in this class.

FANCY DAHLIAS.

For Eighteen distinct Blooms of "Fancy" varieties there were only two competitors, Mr. S. MORTIMER, Farnham, Surrey, and Mr. JOHN WALKER, Thame, Oxon, who were placed 1st and 2nd respectively. Mr. MORTIMER's collection included Dorothy, Mrs. Mortimer, Henry Glassecock, Duchess of Albany, John Forbes, Edmund Boston, Mrs. John Downie, Dandy (a good bloom), Henry Clark, Frank Pearce, Dazzler, Professor Fawcett (of excellent shape), Mrs. Reggie Green, Rev. J. B. McCamm, Chas. Turner, Buffalo Bill, Novelty (a pleasing bloom, light rosy ground and claret-coloured stripings), and Plutarch. Mr. WALKER's exhibit was not much inferior to the 1st prize collection and contained some excellent flowers.

Twelve distinct Fancy Blooms.—There were four exhibitors, 1st honours falling to Mr. WILLIAM TRESEDER, Cardiff, who staged, among others, Prince Henry, Comedian, Mrs. Saunders, Frank Pearce, Sunset, Dorothy, &c. Mr. G. HUMPHRIES, Kingston Langley, Chippenham, was 2nd; and Messrs. KEYNES, WILLIAMS & Co., Salisbury, 3rd.

Show and Fancy intermixed. There were seven exhibitors in this class, and 1st prize was won by Mr. WILLIAM TRESEDER, whose blooms were of fine form, colour, and substance, and included Mrs. W. Slack, Mrs. David Sanders, Excellent, Norma, Daniel Cornish, Mrs. Saunders, Shottesham Hero (grand flower), Rebecca (a dark magenta-coloured sport), Duchess of York, Standard (a new dark scarlet), Goldfinder, and Gracchus. Messrs. F. TAYLOR & SONS, Kingham Nurseries, Chipping Norton, were 2nd, whose blooms of Marjorie and Prince of Denmark were excellent. 3rd, Mr. WM. TRESEDER.

CACTUS DAHLIAS.

The leading feature in this popular section, and that for which one of the most valuable and coveted trophies of the Society is presented, was the class for eighteen varieties, with six blooms of each variety. The 1st prize included a valuable Silver Challenge Cup. There were three competitors, and competition was keen, but the judges awarded Messrs. J. STREDWICK & SON, Silverhill Park, St. Leonards, 1st honours, whose varieties were all of lighter shades, with the exception of Alfred Morgan (rich scarlet). The other varieties were H. J. Jones, Rainbow, Geo. Gordon, Thomas Parkin, Radium, England's Queen, Mrs. H. L. Brousson, Tricolor, J. B. Riding (one of the finest new Dahlias exhibited at the show), H. F. Robertson, Comet, Columbia, Lady Colin Campbell, Ella Krammar, Florence M. Stredwick, Pearl, and Antelope. Messrs. J. CHEAL & SONS, Crawley, were 2nd; and Messrs. KEYNES, WILLIAMS & Co., Salisbury, 3rd.

Twelve distinct varieties, six Blooms in each bunch.—Competition was keen among seven exhibitors in this class, but the final decision was given in favour of Mr. H. SHOESMITH, Westfield, Woking, he having excellent examples of Ben Nash, T. Stevenson, Mrs. E. Mawley, W. E. Dickson, H. W. Sillem (grand flowers, rich scarlet), W. Hopkins, J. W. Wilkinson (a very fine bunch), Mrs. S. T. Wright (new), Phyllis, Amy, Mrs. Frances Wellesley, and Miss Dorothy Oliver. Mr. G. HUMPHRIES, Kingston Langley, Chippenham, was 2nd; Mr. S. MORTIMER, Farnham, 3rd.

For forty-eight Blooms, distinct. There were but two exhibitors, Messrs. JAMES STREDWICK & SON and Messrs. KEYNES, WILLIAMS & Co., who won 1st and 2nd prizes in the order named; although there was but little to choose between their respective groups, the winner had somewhat brighter and more refined flowers; Vulture, Violetta, Mrs. Keith, J. H. Jackson, Mrs. H. L. Brousson, Rainbow, W. P. Wright, The Czar, Marconi, Comet, Wheatear, J. W. Wilkinson, Columbia, and Apriote, were the more commendable of the flowers in the premier group. The flowers were arranged on exhibition boards.

Twenty-four Blooms distinct.—No fewer than seven growers entered. Mr. WILLIAM TRESEDER won 1st prize after a close struggle with Mr. J. WALKER, Thame, who was placed 2nd; Mr. S. MORTIMER, Farnham, being 3rd. The 1st prize exhibit included Mrs. J. J. Crowe, Mrs. Wilkinson, J. H. Jackson, Imperator, Phineas, Ianthe, Mrs. Carter Page, Mrs. E. Mawley, Mrs. Clinton, Mrs. Winstanley, Vesta, Violetta, W. F. Balding, Sheriff Henderson, T. G. Stredwick, Princess, H. T. Robertson, Etna, Decima, Columbia, F. M. Stredwick, Ringdove, Gladiator, and Minnie West. Mr. WALKER's collection contained many refined flowers.

Twelve Varieties, six Blooms of each.—These were to be arranged with any suitable foliage, grasses, or berries, and the display was pretty. The 1st prize group was set up by Mr. M. V. SEALE, Vine Nurseries, Seven-



FIG. 75.—A PERGOLA FURNISHED WITH GOURDS.

NATIONAL DAHLIA.

Centenary of Dahlia Cultivation in Britain.

SEPTEMBER 2 and 3.—The annual exhibition of the National Dahlia Society this year marks the centenary of Dahlia cultivation in Britain, see p. 189. It was held at the Crystal Palace, the large recess opposite the grand organ being filled with choice exhibits of this popular flower. The show perhaps was not quite so extensive as that of last season, but the quality of the flowers was of a high standard, and there was keen competition in most of the classes.

The season has favoured the plants in certain districts, while in other places growers complain that they have not been able to obtain the best results. The Cactus type was exhibited in the greatest number. Several extensive non-competitive groups were arranged on side-tables, the central tables being wholly occupied with competitive exhibits.

The amateurs quite held their own in comparison with the trade growers, and the enthusiasm of the former over their favourite flowers was remarked in the eager comparison of their blooms and their critical remarks as to the form, substance, depth, and refine-

Service (fine deep yellow flower of large substance), Miss Goodwin, John Walker, John Standish (fine scarlet bloom), R. T. Rawlings, Lord Chelmsford, Penelope, Shirley Hibbard, Shottesham Hero, S. Mortimer (well-shaped flower), Queen of the Belgians, Warrior, John Hickling, Pleasance, Mrs. Mortimer, Rev. J. Gooday, Maud Fellowes (handsome light rosy-pink flower), Imperial, Rothesay, Victor, Lord Salisbury, Mrs. Gladstone, Harry Keith, Mrs. C. Noyes, Diadem, H. W. Ward, Wm. Rawlings, Mrs. D. Saunders, Jos. Ashby, Colonel, Goldfinder, Florence Tranter, Critterion, Arthur Rawlings, Conte de la Saux, Champion Rollo, Earl of Ravensworth, Mrs. Langtry (yellow ground, claret tipped), Rosamond, J. C. Vaughan, Glowworm, and a seedling. Mr. J. WALKER, Thame, Oxon, was 2nd, whose collection included perfect flowers of the varieties Miss Cannell, Duchess of York, Mrs. Morgan, and Wm. Rawlings. Messrs. KEYNES, WILLIAMS & Co., Salisbury, were 3rd.

Twenty-four Blooms, distinct varieties. Mr. WILLIAM TRESEDER, The Nurseries, Cardiff, was 1st with good flowers of William Rawlings (well finished flower), John Walker, David Johnson (a handsome bloom), Mrs. Every, Mr. Chamberlain (fine dark-

oaks, whose flowers, of good substance and form, were suitably interspersed with fruiting sprays of Mountain Ash, Berberis Darwinii, Symphoricarpos, &c., and of variegated foliage grasses. Messrs. J. CHEAL & SONS, Crawley, were 2nd, their display having Crab Apples, berries, &c., very artistically intermixed with the flowers. Mr. J. WALKER, Thame, 3rd.

POMPON DAHLIAS.

Twenty-four varieties, in bunches of ten Blooms each. There were three entries, Mr. CHAS. TURNER, Slough, taking 1st prize with a collection of excellent small and neat flowers, including Douglas, Adelaide, Bacchus (fine scarlet), Daisy, Thalia (a lovely shade of rose), Isabel, Queen of Whites, Hesperia (having orange ground with scarlet edging), Ganymede, Darkest-of-All, Elsa, Calatea, Nerissa, Zerlina, Montague Wooten, Silva, Edna, Cyril, Elaine, Mignon, Wilfred, Jessica, San Toy, and Mephisto. Messrs. J. CHEAL & SONS, Crawley, were 2nd, and had excellent flowers of Minnie, Virgo, and Little Bugler; Mr. M. V. SEALE, 3rd.

Twelve Varieties, ten Blooms of each.—Mr. JOHN WALKER, Thame, was 1st; Mr. GEO. HUMPHRIES, Chippenham, 2nd.

SINGLE DAHLIAS.

This section was not strongly represented, although the type of flower is to our mind one of the choicest of the whole genus, and admirably adaptable for cutting purposes, a few blooms with light grasses making choice displays in vases, &c.

For twenty-four varieties, in bunches of ten of each variety, there were two entries; while for the class for twelve varieties, ten of each variety, only one group was entered. In the former class Messrs. CHEAL & SONS, Crawley, were 1st, the choicer flowers being Naomi Tighe, Bessie, Polly Eccles, Miss Morland, Madge, Robin Adair, Miss Roberts (a refined yellow flower), Beauty's Eye, Fernosa, Vesuvius, Snowdrop, Columbine (an exquisite shade of pink-rose with a yellow centre), and Princess of Wales (a first-class pink variety). Mr. SEALE, Sevenoaks, was 2nd.

Mr. JOHN WALKER, Thame, was the only exhibitor in the class for twelve single varieties, and his exhibit was awarded 1st prize. Columbine, Fascination, Leslie Seale, Princess of Wales, Miss Roberts, and Hilda were the more commendable of his flowers.

AMATEURS' SECTION.

Many keen struggles took place for the premier prizes; indeed, the judges must have required very careful deliberations before making their final decisions. The six bunches shown by Mr. F. H. McGRATH in Class 22 were, to our mind, equal to any in the show.

Twenty-four distinct Blooms of Show or Fancy Varieties.—There were five competitors, Mr. T. JONES, Bryn-pen-y-lan, Ruabon, being placed 1st, his collection being very meritorious, and including Harbinger (new), Vice-President, Colonist, The Reverend, Geo. Rawlings, H. Ashby, S. Mortimer, Dan. Cornish, R. T. Rawlings, Chieftain, Mrs. Mackenzie, Earl of Ravensworth, Perfection, Mrs. Gladstone, Reliance, Mrs. Langtry, Maud Fellows, Brilliant, John Walker, A. Rawlings, Ethel Britton, W. Rawlings, J. Stevens, and Victor. Mrs. S. COOPER, The Hamlet, Chippenham, Wilts, was 2nd; and Mr. T. HOBBS, The Cedars, Downend, 3rd.

SHOW DAHLIAS.

Twelve Blooms, distinct.—Five exhibitors competed, and the 1st prize was awarded to Mr. S. COOPER, Chippenham, Wilts, who had the varieties Arthur Rawlings, Hero, Rev. J. Goodday, Colonist, Maud Fellows, Dorothy, Mrs. Langtry, Shirley Hibberd, Victor, John Walker, R. T. Rawlings, Ethel Britton, &c. Mr. G. DENSLEY, Nag's Head Hill, St. George, Bristol, was 2nd; and Mr. R. BURGIN, St. Neots, 3rd.

Six Blooms, distinct.—Mr. T. JONES, Bryn-pen-y-lan, Ruabon, was 1st. The varieties R. T. Rawlings and Perfection were very fine. Mr. J. COUSINS, Chippenham, was 2nd.

Fancy Dahlias, twelve Blooms, distinct. 1st, Mr. S. COOPER, The Hamlet, Chippenham, who had excellent flowers of Mrs. Saunders, Dorothy, and Empress; 2nd, Mr. T. ANTIS, Brill, Thame. There were four competitors in the class for six blooms. Mr. J. NEWTON, Bell Inn, Kingswood, Bristol, being 1st, and Mr. GEO. HOOD, Chippenham, 2nd.

CACTUS DAHLIAS.

Vases of Dahlias.—Mr. H. A. NEEDS, Heath View, Horsell, Woking, won 1st prize with good vases of blooms, the variety Mrs. Carter Page being very meritorious; 2nd, Mr. E. TURNER, Sevenoaks, Kent.

For nine varieties in bunches of three Blooms of each variety. Mr. W. E. PETERS, Hastings, was 1st, the prize carrying with it the holding of a Silver Challenge Cup for one year, to become the property of any exhibitor who wins it for three consecutive years. The winner's varieties included Mrs. J. W. Wilkinson, H. F. Robertson, Rainbow, Sirius, Geo. Gordon, Mrs. H. L. Brousson, Mrs. Mawley, Mrs. Seagrave, and C.

G. Stredwick. Mr. P. W. TULLOCK, Forest Cot, Balcombe, was 2nd., and Mr. J. SCHOORIDGE, East Grinstead, 3rd.

Six varieties, three Flowers of each.—Mr. F. H. McGRATH, Lindley, Huddersfield, was 1st with excellent flowers, the variety Rainbow taking the Silver Medal for the best bunch of Cactus Dahlias in the Amateurs' Section; H. J. Jones and Mrs. Carter Page were also of first-class quality. Mr. H. BROWN, Luton, Beds, was 2nd.

Twenty-four distinct Blooms.—The 1st prize carrying with it a Gold Badge presented by Messrs. DOBBIE & Co., Rothsay, was won by Mr. H. NEEDS, Woking. This class evoked strong competition. The winner had Mrs. Ed. Mawley, Phineas, F. H. Chapman, J. H. Jackson, Mrs. J. J. Crowe, Violetta, H. J. Jones, Mrs. Carter Page, Clara Stredwick, Mabel Needs, Lottie Dean, Mrs. Mackintosh, Rainbow, J. W. Fife, W. F. Balding, Uncle Tom, Lauretta, Mr. Seagrave, Geo. Gordon, Raymond Parks, Lady Colin Campbell, Oliver Twist, Mrs. Clinton, and H. F. Robertson. Mr. J. BRYANT, Salisbury, was 2nd.; and Mr. L. McKENNA, Twyford, Berks, 3rd.

Twelve Blooms, distinct.—Mr. F. H. McGRATH, Lindley, Huddersfield, was 1st; and Mr. W. LOCKYER, Barnet, 2nd.

For six Blooms, distinct, there were eight entries, that of Mr. M. W. DANCE, Andover, being awarded 1st prize.

SEEDLINGS.

A moderate number of new Dahlias was presented to the Committee for recognition, including several meritorious blooms, to eleven of which the Committee awarded the Society's Certificate of Merit. Probably the gem of the collection was a Cactus variety named J. B. Riding, shown by Messrs. J. STREDWICK & SONS, St. Leonards, a bunch of this flower receiving a Silver Medal for the best bunch of Cactus Dahlias in Classes 6 and 7. There was also a good show variety named Mrs. Hobbs, which obtained a Bronze Medal for the best Show or Fancy Dahlia in Class 43.

Rosy Morn.—A Cactus variety of pleasing pink colour, shading off to a lighter centre; flower of good shape.

Cockatoo.—A Cactus flower with lemon-yellow coloured petals, the latter being well formed. Both the above from Messrs. KEYNES, WILLIAMS & Co., Salisbury.

Jeannette.—A very refined yellow self Cactus flower.

Miss Dorothy Oliver.—A Cactus flower of good form, having creamy-yellow petals. Both the above from Mr. H. SHOESMITH, Woking.

Mrs. Hobbs.—A pure white Show variety, of large substance and good form. Received the Bronze Medal for the best Show or Fancy seedling. Shown by Mr. THOS. HOBBS, Bristol.

Fairy.—A white Cactus flower with pleasing light petals.

J. B. Riding.—A large refined flower of the Cactus type, of a dark orange to yellow colour, with a pleasing eye somewhat lighter in colour.

Thos. Parkin.—A light terra-cotta Cactus flower, having the petals very incurved; a flower of much substance.

Tricolor.—A Cactus flower, with yellow to white groundwork, striped with claret-coloured markings; flower medium-sized.

Ella Kracmar.—A refined flower with petals decidedly incurved, of a rosy-pink colour.

The five last-named flowers from Messrs. JAS. STREDWICK & SONS, St. Leonards.

Mikado.—A single flower; petals with yellow-coloured margins and scarlet base; flower very regular, with a well-formed eye. Shown by Mr. M. V. SEALE, Sevenoaks.

MISCELLANEOUS EXHIBITS.

Mr. A. LL. GWILLIM, New Eltham, Kent, staged an extensive collection of flowers of tuberous-rooting Begonias.

A large collection of Cactus and Pompon Dahlias was set up by HOBBS, Ltd., Dereham Nurseries, Norfolk. Vases and stands were utilised for their display, intermixed with small Palms, Ferns, &c., and having tiny arches at the background covered with trailing Roses, &c. (Silver Medal).

A somewhat similar group was staged by Messrs. CANNEL & SONS, Swanley. The collection was entirely of Cactus varieties, among which were artistically worked sprays of Gypsophila elegans, Asparagus plumosus, &c. A suitable finish was given by well-grown specimens of Koehia scoparia (Silver Medal).

Mr. J. T. WEST, Tower Hill, Brentwood, presented a collection of Cactus and Pompon Dahlias, the former being displayed on boards.

Messrs. PEED & SONS, West Norwood, showed a collection of Gloxinias and Caladiums in pots (Silver Medal). Messrs. PEED also showed a collection of Pears and Apples.

Messrs. W. CUTBUSH & SON, Highgate, N., set up a collection of Cactus Dahlias arranged in epergnes,

bamboo vases, &c., with suitable foliage plants (Silver Medal).

Messrs. T. S. WARE, Ltd., Feltham, staged well-grown flowers of Cactus Dahlias, relieved with Ferns, Codiaeums (Crotons), &c. (Large Silver Medal).

THE VINERIES, Ltd., Acocles Green, Birmingham, set up a number of vases filled with Cactus Dahlias and ornamental foliage.

THE DÜSSELDORF EXHIBITION.

It is generally allowed that the Germans carry out their undertakings much more thoroughly than we do in this country, and it must be admitted that the horticultural exhibition at Düsseldorf tends to prove this axiom. Recognising that a six-months' horticultural exhibition alone would not draw a sufficient number of paying visitors to make the show a success, an art exhibition was incorporated with it, and other attractions were also provided. But the exhibition is essentially a horticultural one—large and comprehensive.

No more beautiful or appropriate city could have been chosen for the site of a horticultural exhibition. Provided with many hotels, served by excellent steam-boat and train systems, it is able to cater for the comfort of its visitors, while its beautiful and extensive avenues and parks, gardens and open spaces, fountains and lakes, all carefully kept, give it an easy claim to its title of "The Garden City of the Rhine."

On entering the exhibition by the main gates some glasshouses are encountered, in the first of which Mr. A. Lietze, of Rio, exhibits Caladiums, reported to include 150 varieties. A large tank, measuring 4 by 10 yards, in the next house, is filled with a splendid show of Indian Lotus (both rose-pink and white and pink), from the grand ducal garden Rosenhöhe, at Darmstadt, the next house being filled with Victoria Regia and other tropical water plants from the Hamburg Botanical Garden. In other houses there were Nymphaea cerulea, N. rubra, N. dentata, N. maxima, N. zanzibariensis, Hydrocleys nymphoides, and many other fine aquatics.

Many exotic climbing plants and Gourds were also shown to perfection, including Allamanda Williamsii, Momordica Charantia, Curcuma rubescens, and Aristolochia grandiflora. The grounds had been planted for several months, and are well established. They include a Dahlia garden, an alpine slope, a Rose garden, a small nursery of fruit and other trees, and four plots of an average size of 40 by 20 feet, set out and planted as models, to show what town-dwellers or cottagers may do with so limited a space. The first plot is devoted to vegetables; Runner Beans are trained on poles set cross-wise over the path; vegetables are planted in the centre; fruit is trained on the wall, and Gourds grow on the fences. The next two plots are devoted to climbing, standard, and dwarf Roses, and to hardy flowers respectively. The fourth garden is of a more general character, and includes fruit, flowers, and vegetables.

An effort has been made to render the whole exhibition of an instructive but withal interesting character, but definite educational exhibits are by no means lacking. Teaching centres and institutions, and publishers have contributed models, plans, diagrams, views, books and specimens illustrative of horticulture, and applied bacteriology, morphology, entomology, botany, and chemistry. During the time of my visit (the last week in August) a special exhibition was held of Cactus Dahlias, fruits, table decoration, and trophies.

The flowers, although good, were somewhat inferior to those usually seen at the Royal Horticultural Society's fortnightly shows, and the German taste in floral arrangement is somewhat like that which prevailed with us some forty years ago, stuffed birds and ribbons being all too prevalent, while on a table decorated for a children's party we noticed even twin sugar dolls in tin cradles set to each place!

The fruit was of good quality, but there was nothing of conspicuous merit. The system of exhibiting fruiting-sprays with the gathered fruits, so as to show the cropping qualities of the trees, was excellent, and many of the methods of packing were very good.

Many other special horticultural shows have already been held, and others are announced. The International Autumn Exhibition from September 3 to 11 comprises stove plants, Aucubas, Begonias, Cyclamens, Fuchsias (which are much cultivated in Germany), Pelargoniums, Alpine plants, Cannas, Dahlias, and pot Roses; and on the first four days thereof (September 3–6) an International Exhibition of Orchids will also take place. But for British horticulturists, the most interesting of the many special shows will be the International Fruit Exhibition, to which reference has already been made in these columns. This will continue from October 8 to October 16. Such a great show being held in the Garden City of the Rhine in a record fruit year will afford an opportunity, of which English gardeners and others should avail themselves, to go and see for themselves how and what things are done abroad, what to imitate, and what to avoid. The date being later than our own British fruit exhibition in Vincent Square (October 4–6) will enable visitors to see both the home and foreign exhibitions in suc-

cession. The expense is not great, and a week could be spent with much enjoyment and advantage in the Rheingau, or other fruit-producing localities of Southern Germany. We call to mind the Floral Garden at Cologne, the Government Fruit Institute, and the celebrated Mon Repos Garden at Geisenheim, the great Palm Garden at Frankfurt, the tasteful park-lands of Wiesbaden, the castle garden of 117 acres at Schwetzingen near Heidelberg, to say nothing of the beauty of the country itself or of the many orchards, nurseries, woods, and gardens with which it abounds.

If we are to keep pace with our foreign competitors, especially in fruit-growing, we must keep ourselves abreast of all that is being done by them, or later on we shall have to deplore a still greater expenditure upon imported fruits. S.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey, 118 ft. above sea-level 150 feet. The following are the "mean" readings for the week ending September 3, 1904.

1904.		TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.		SUNSHINE.			
AUGUST 23 TO SEPTEMBER 3.		At 9 A.M.		DAY.	NIGHT.	LOWEST TEMPERATURE ON GRASS.								
		Dry Bulb.	Wet Bulb.			Highest.	Lowest.	At 1-foot deep.					At 2-feet deep.	At 4-feet deep.
MEANS		deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.			
		63	59	70	51	46	62	62	60	0.92	5	13		

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Sept. 3, is furnished from the Meteorological Office:—

"The weather was fine generally during the opening days of the period, but as early as Monday a thunderstorm occurred at Pembroke, and on the following day in many western and some northern localities. After this date the weather was of a broken character, sometimes dull and rainy, but with several fine intervals.

"The temperature was very high until the 30th, the maxima recorded on that or the preceding day being 81° in England, S., and the Midlands, 82° in England, N.E., 81° in England, E. and N.W., and between 78° and 76° elsewhere. The rest of the week was much cooler, but the averages for the whole period varied from 1° above the mean in Ireland, S., and the Channel Islands, to 2° or 3° generally, and 1° in England, N.E. The lowest readings were mostly recorded on Friday or Saturday, and ranged from 38° in Scotland, E., to 47° in England, S., and to 54° in the Channel Islands.

"The rainfall was rather less than the mean in the Midland Counties and England, N.W. and S.W., just equalled it in Ireland, S., and the Channel Islands, and slightly exceeded it in Scotland, Ireland, N., and England, N.E., E., and S. Falls of more than an inch were experienced some time during the week in many districts.

"The bright sunshine exceeded the mean generally, but was deficient in Scotland, E., England, S., Ireland, S., and the Channel Islands. The percentage of the possible duration ranged from 46 in the Midland Counties, and 41 in England, S.W., to 32 in Ireland, N., and Scotland, E., and to 27 in Scotland, N."

THE WEATHER IN WEST HERTS.

A Welcome Rainfall.—The range of temperature during the week was considerable. On the warmest day the highest reading in the thermometer-screen was 72°, and on the coldest night the exposed thermometer fell to within 2° of the freezing-point. The ground is at the present time slightly warmer than is seasonable, both at 1 and 2 feet deep. Rain fell on four days to the total depth of nearly 1½ inch, which is equivalent to a fall of over 5 gallons on each square yard of surface in my garden. Nearly the whole of that amount was deposited on a single day, when rain fell almost continuously from 11 A.M. on August 31 until 10 A.M. on the following day, or for twenty-three consecutive hours. Percolation through the bare soil gauge recommenced after that fall, but the amounts are now gradually decreasing. The sun shone on an average for five hours a day, which is about the average duration for the time of year. Light airs mostly prevailed. The mean amount of moisture in the air at 3 P.M. was 5 per cent. in excess of a seasonable quantity.

AUGUST.

Many Cold Nights.—Taken as a whole the month of August was seasonable in temperature, dry, calm, and

snovy. There were a few hot days at the beginning of the month, and again towards its close; but during the intervening period there was scarcely any warm weather. In fact, in the fortnight ending the 25th, there did not occur a single unseasonably warm day, and but three warm nights. On the hottest day the temperature rose to 86°, and on the coldest night the exposed thermometer fell to within 4° of the freezing point. It is now seventeen years since the average temperature of the nights in August has been as low. Rain fell on eleven days to the aggregate depth of 2½ inches, which is ½ an inch below the mean for the month. In only two of the last eighteen years has the record of sunshine in August been as large. The general calmness of the atmosphere was also equally exceptional. On the one windy day the mean velocity in no hour exceeded nineteen miles—direction west. The mean amount of moisture in the air at 3 p.m. was about one per cent. in defect of the average for the month.

THE SUMMER.

Warm, Dry, and exceptionally Sunny.—As regards temperature June proved cold, July very warm, while August was of about average temperature. In June the fall of rain proved very light, in August it was also below the mean, but in July the fall was unusually heavy. The duration of sunshine during the summer was remarkable, being, with three exceptions, the largest recorded here in any summer during the last eighteen years. E. M., Beckenstead, September 6, 1904.

MARKETS.

COVENT GARDEN, September 7.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12 0	Euonymus, vars.,	4	0-10 0
Arbor Vitæ, per doz.	9	0-18 0	Ferns in var., per dozen	4	0-8 0
Aspidistras, per doz.	18	0-36 0	Ficus elastica, per dozen	9	0-24 0
Asters, doz. pots	3	0-4 0	Fuchsias, per doz.	2	0-4 0
Aneubas, per doz.	4	0-8 0	Hydrangeas, doz.	12	0-18 0
Australian Bush Ferns, dozen	10	0-12 0	Lilium speciosum rubrum, per dozen	8	0-10 0
— per box	2	6-4 0	Lycopodiums, per dozen	3	0-4 0
Balsams, dozen	2	0-3 0	Palms, variety each	3	0-20 0
Begonias, per doz.	6	0-8 0	Pteris tremula, p. dozen	4	0-8 0
Campanulas	3	0-4 0	Tropeolum, per dozen	3	0-4 0
Canas	4	0-6 0	Verbena, per dozen	4	0-6 0
Chrysanthemums, per dozen	3	0-4 0			
Cocos	12	0-18 0			
Crotons, per doz.	12	0-24 0			
Cyperus, per doz.	3	0-4 0			
Dracenas, variety, dozen	6	0-18 0			

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alströméria, per dozen bunches	3	0-4 0	Lilium lancifolium	1	0-2 6
Asters, per doz.	2	0-6 0	Lily of the Valley	12	0-15 0
Bouvardias, doz.	4	0-6 0	Lobelia cardinalis, per dozen bunches	3	0-4 0
Cape Gooseberry, per doz. bunch.	6	0-8 0	Mallow, per doz.	2	0-3 0
Carnations, doz. bunches	9	0-18 0	Marguerites, yellow, 12 bunches	0	9-1 6
Chrysanthemums, dozen bunches	6	0-9 0	Marguerites, white, dozen bunches	2	0-4 0
Coreopsis, p. doz.	0	6-1 0	Orchids, various, per dozen	2	0-8 0
Cornflower	0	9-1 0	— Cattleyas	6	0-12 0
Dahlias, per doz.	3	0-6 0	Pelargonium, zonal, dozen bunches	3	0-6 0
Eucharis, doz.	2	0-3 0	— white, dozen bunches	4	0-6 0
Ferns, Asparagus, per bunch	0	6-1 6	— double-earlet, per doz. bun.	2	0-4 0
French, 12 bun.	3	0-4 0	Phlox	3	0-4 0
— Maidenhair, doz. bunches	4	0-6 0	Pyrethrum, per doz. bunches	2	0-3 0
Gaillardias, doz.	0	9-1 0	Roses, Hermet, per bunch	1	0-2 0
Gardenias, box	1	0-2 0	— white, bunch	1	0-2 0
Gypsophila, doz. bunches	2	0-4 0	— pink, bunch	1	0-3 0
Gladiolus, white, doz. bunches	3	0-5 0	— red, bunch	0	4-1 0
— various, doz. bunches	3	0-6 0	— Safran, per bunch	1	0-1 6
red, per doz. spikes	1	0-3 0	Smilax, 12 bunch.	1	6-3 0
— dozen bun.	2	0-3 0	Statice, 12 bunches	3	0-6 0
Golden Rod, doz.	3	0-4 0	Stephanotis	1	0-2 0
Heather, Scotch, per bunch	0	6-0 8	Stocks, 12 bunches	2	0-4 0
Honesty, bunch	1	0-4 0	Sunflowers	2	0-4 0
Lavender	2	0-4 0	Tuberose, stem, bunch	0	9-1 0
Lilium anatum, per bunch	1	6-3 0	— short, p. doz.	0	2-0 4
— Marisii, per bunch	3	0-4 0			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, bushel	1	0-2 6	Grapes, Muscat A, per lb.	2	0-2 6
— English, sieve or half bus.	1	0-2 0	B, per lb.	0	6-1 6
Bananas, bunch	5	0-10 0	— Canon Hall A, per lb.	3	0-4 0
— loose, dozen	1	0-1 6	B, per lb.	1	3-2 0
Blackberries, per lb.	0	3-0 1	Lemons, per case	7	0-25 6
Cobnuts, per lb.	0	8-1 0	Melons, each	0	4-1 0
Figs, per doz.	0	8-1 0	Nectarines, A, per dozen	8	0-12 0
Filberts, per lb.	0	2	— B, per doz.	3	0-5 0
Grapes, Hambro' A, per lb.	1	6-2 0	Oranges, per case	10	0-12 0
B, per lb.	0	1-0 9	Peaches, A, per doz.	6	0-3 0
Gros Maroc, lb.	0	8-1 3	— B	1	0-3 0
Gros Comar, per lb.	0	10-1 6	Pears, per sieve	1	6-3 0
Alicante, per lb.	2	6-1 3	Pines, each	2	0-4 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen	4	0-6 0	Mushrooms (house) per lb.	0	9-1 3
Beans, dwarf, per sieve	2	6 —	Onions, green, doz. bunches	2	0 —
— Scarlet Runners, per bushel	1	6-2 0	— per bag	4	0-4 6
Beetroots, bushel	1	6-2 0	— per case	6	0 —
Cabbages, tally	1	6-2 0	Parsley, per doz. bunches	1	0-2 0
Carrots, per doz. bunches	0	9-1 6	— sieve	0	6-1 0
— bag	2	6-3 6	Potatoes, per ton	0	0-90 0
Cauliflowers, per dozen	1	0-1 6	Radishes, per dozen bunches	0	9-1 0
Celery, per dozen bunches	9	0-15 0	Salad, small, punnets, per doz.	0	9 —
Cress, doz. pun.	0	9 —	Shallots, sieve	3	0 —
Cucumbers, doz.	1	6-2 6	Spinach, p. sieve	1	0-1 6
Endive, per doz.	2	0 —	Tomatos, Channel Islands, per lb.	0	2 —
Garlic, per lb.	0	2½ —	— English, doz.	2	0-3 6
Horseradish, foreign, p. bunch	1	0-1 2	Turnips, new, doz.	1	0-2 0
Leeks, 12 bundles	1	0-1 3	— bag	3	0 —
Lettuces, Cabbage, per dozen	1	0-1 6	Vegetable Marrows, per doz.	0	9-1 0
— Cos, per doz.	1	9-2 0	Watercress, per dozen bunches	0	4-0 6
Mint, doz.	1	0-2 0			

REMARKS.—Canon Hall Muscat Grapes are of high quality. Prices for Apples remain much the same as those of last week: the finest cookers realise 2s. 6d. per bushel; Worcester Pearmain, 2s. per sieve or half bushel; Quarrenden, 1s. to 2s. doz.; Pears, Hesse, 2s. to 3s. per bushel; "Williams," 3s. to 4s. doz.; Plums, Victorias, 1s. 6d. to 2s. per bushel; Pond's seedling, 2s. to 3s. doz.; Gages, 2s. 6d. to 3s. doz.; Damsons, 1s. 9d. to 2s. doz.; Blackberries, 1s. 6d. per peck of 12 lb.; Cornicobs, 9d. per dozen; French crates of various Pears, 2s. to 3s. per crate; Californian Plums, 4s. to 5s. per case; Grapefruit, 15s. per case; Italian Figs, 1s. per box of 12 fruits. Prices for Runner Beans dropped very much on Saturday last. Unwashed Celery, 1s. to 1½s. per dozen. Supplies all round are plentiful.

POTATOES.

Various, home-grown, 65s. to 90s. per ton, John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

THE trade for pot-plants continues quiet; not many flowering plants are seen. Chrysanthemums are numerous, of which well-grown plants sell fairly well. Asters, lifted from the open ground, are very plentiful; growers do not cultivate them in pots for market as they did some years ago. Liliums are still plentiful. Some well-flowered plants of Cannas are to be seen. There are still a few Marguerites, Fuchsias, &c., but Ferns and foliage plants are the more prominent. Well-berried plants of Solanum elaeagnifolium are now arriving. Euonymus, green and variegated Laurels, Cupressus Lawsoniana, Veronicas, Palms, Dracenas, and Aspidistras are seen on many stands, but sell slowly. Ficus elastica and F. radicans are good. Ferns of all varieties are over plentiful. Large plants of Nephrolepis are offered at low prices. Hardy climbers are appearing again. Ampelopsis, Clematis, Ivies, Passifloras, &c., are to be had in good plants at moderate prices. Large Conifers are also prominent; the Golden Privet within the last few years has been planted extensively throughout the London suburbs, while dwarfier plants are used for window-boxes, &c. The trade next week is likely to be influenced by a number of provincial buyers, who will be in London attending the bulb sales, &c.

CUT FLOWERS.

Chrysanthemums continue to increase in quantity. The best whites are still Madame Desgrange and Lady Fitzgram; Market White is also in the market. The yellow-flowered Madame Desgrange and Horace Martin are plentiful, also the deeper yellow varieties Madame Masse, Harvest Home, and Nellie Blake. Good pink varieties are not yet plentiful, although some large blooms of Pink Merriville are seen. Asters are over-plentiful, most of the flowers seen being only of moderate size. White, pink, and purple colours are more in demand; the purple found little sale a few years ago, now this colour is much used for wreaths, &c. Single Asters (Callistephus sinensis), in pink and deep mauve, are now much grown. Flowers of the perennial Aster "Amellus" are also coming in. The yellow Marguerites are very plentiful. Calliopsis grandiflora is very fine. The long spikes of Lobelia cardinalis are showy. Gaillardias are prominent. Among Roses are some good flowers of Catherine Mermet, Perle des Jardins, and a few other varieties. Roses generally are now of poor quality although plentiful. Carnations continue fairly abundant, but are small. Sweet Peas are of poor quality. Gladioli in variety are plentiful, also Liliums—L. lancifolium rubrum is much in excess of the demand. Lily of

the Valley of good quality is plentiful. Gardenias, Stephanotis, and Tuberoses are obtainable at low prices. Cut Fern and other foliage is very plentiful. There is also a good supply of hardy berried foliage: the *Physalis Francheti* (Cape Gooseberry) makes a great show just now. This species has quite taken the place of *Physalis Alkekengi*. A. H.

FRUITS AND VEGETABLES.

GLASGOW, September 7.—The following are the averages of the prices during the past week:—Apples, American, 12s. to 16s. per barrel; do., English, 8s. to 12s. per cwt.; Greengages, 3s. to 5s. per half sieve; Plums, 3s. to 5s. do.; Melons, 24s. 5s. 6d. to 6s. 6d. per case; do., 36s. 6s. 6d. to 7s. 6d. do.; Lemons, 8s. to 10s. per case; Grapes, English, 1s. to 1s. 9d. per lb.; do., Almeria, 5s. to 15s. per barrel; do., home, 9d. to 1s. per lb.; Bananas, 5s. 6d. to 11s. per bunch; Tomatoes, English, 3d. do.; do., Scotch, 3d. to 5d. do.; Mushrooms, Scotch, 10d. to 1s. 3d. do.; Shallots, 8s. per bag of 110 lb.

LIVERPOOL, September 7.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatoes, per cwt., Early Regents, 2s. 4d. to 2s. 9d.; kidneys, 2s. 9d. to 3s. 4d.; British Queen 2s. 6d. to 3s.; Conquest, 2s. 4d. to 2s. 9d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 4d. to 1s. 9d. per cwt.; Carrots, 8d. to 10d. per dozen bunches; Cucumbers, 1s. 6d. to 2s. 6d. per dozen; Onions, foreign, 3s. 9d. to 4s. 3d. per bag; Parsley, 6d. to 8d. per dozen bunches; Lettuces, 4d. to 8d. per dozen; Cauliflowers, 10d. to 2s. 3d. per dozen; Cabbages, 6d. to 10d. do.; Celery, 1s. 3d. to 2s. do.; Beans, 2s. 4d. to 2s. 10d. per hamper; do., Kidney, 1s. 3d. to 1s. 6d. per peck; Scarlet Runners, 1s. 6d. to 1s. 10d. per peck. Fruit: Grapes, Almeria, 2s. to 5s. per barrel; do. of Castigo, 10s. to 12s. 6d. per main crop lots; Lisbons, 5s. 6d. to 7s. per box; Melons, Valencia, 2s. 9d. to 4s. 6d. per case; Oranges, Naples, 4s. 6d. to 7s. 6d. per box, and 8s. to 10s. do.; Apples, Canadians, 11s. 6d. to 15s. per barrel; do. Oporto, 3s. to 3s. 9d. per case; do. Lisbon, 2s. 9d. to 3s. 6d. per box; Lemons, Palermo, 3s. to 4s. 6d. per case, and 1s. to 2s. 6d. per box. Naples, 4s. to 7s. per package; superior, 10s. to 18s. Murcia, 5s. to 8s. 6d. per box; Tomatoes, Lisbon, 3s. to 5s. per box. *St. Johns*—Potatoes, 10d. to 1s. per peck; Cucumbers, 3d. and 6d. each; Filberts, 8d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pine-apples, foreign, 3s. 6d. to 5s. each; Mushrooms, 8d. to 10d. per lb. *Birkenhead*:—Potatoes, 8d. to 1s. per peck; Cucumbers, 1d. to 3d. each; Filberts, 6d. to 8d. per lb.; Grapes, English, 1s. to 2s. per lb.; do., foreign, 4d. to 6d. do.; Tomatoes, English, 2d. to 6d. do.; Mushrooms, 6d. to 10d. do.

TRADE NOTE.

CHANGE OF ADDRESS. — Messrs. Dickson & Robinson, Manchester, inform us that they have removed from Old Millgate to Cathedral Street, Manchester.

ENQUIRY.

WHAT is the best way of treating a round pond 14 feet in diameter and about 4 feet deep, with banks sloping towards it about 2 feet deep, in order to keep the water from becoming stagnant and prevent weeds growing on the surface? Is there not some inexpensive appliance to fix in the pond to keep the water in constant motion? Kent.

ANSWERS TO CORRESPONDENTS.

APPLES: *Old Reader*. The variety James Grieve was distributed by Messrs. Bunyard & Co., and is an early dessert Apple. It received an Award of Merit on October 12, 1897. Royal Snow is of Canadian origin, and was distributed in this country by Mr. W. Horne, Perry Hill, Cliffe, Rochester, in 1898 or 1899. It is a late dessert fruit, being in admirable condition at Christmas. The variety Edward VII. was exhibited by Messrs. W. B. Rowe & Sons, Worcester, in 1903, when it gained an Award of Merit, and is a late variety for kitchen use. "Coronation" was raised by Mr. Prinsep, Buxted Park Gardens, Uckfield, and is a dessert variety, ripening in October. It was distributed in 1903. "The Houblon" was raised by Mr. C. Ross, Welford Park Gardens, Newbury, and received an Award of Merit in 1902; it is a late dessert fruit, being in good condition in January. "Rival" is a seedling of Messrs. Cheal & Sons, Crawley, and is in good condition for dessert in November.

APPLE CRACKING: *L. E. W.* The cracking is caused by a fungus, *Fusicladium dendriticum*. Drench the trees in winter with a solution of sulphate of iron. Spray the trees with diluted Bordeaux-mixture next spring, when

the flower-buds begin to open, again when the petals of the flowers are falling, and lastly when the fruits are about the size of Peas.

BEECH-TREES: *E. L., Harlow*. Each specimen of bark sent is different in its manifestations, but not numbered: (a) infested with insect, *Adelges fagi*; (b) green coating, only an Alga, no injury; (c) dense fungus mycelium; (d) long dead and decayed with *Polyporus*. Bark and wood completely penetrated with white mycelium, proceeding from the roots upwards. Apparently caused by white root-fungi in the soil, proceeding from old stumps or dead roots. The only remedy in such cases is to trench up the soil, get out the decayed wood, and disinfect the soil of fungi, or it will pass from one tree to another. It is in a shockingly bad state, and has been for a long time. *M. C. C.*

CURRENTS: *Tasmania*. Red Currant, Raby Castle. Black Currant, Boskoop Giant, rather earlier than Carter's Champion (syn. Baldwin's Champion).

EARLY GOOSEBERRIES: *Tasmania*. The variety Crown Bob may be gathered green at a very early date. Howard's Lancer has very large fruits, and may also be gathered early. This variety is a good grower, and makes a fine, upright bush. These two are among the very best. The variety May Duke is said to yield berries for using in a green condition earlier than any other; but, being new, it is not at present in general cultivation.

FUMIGATION WITH HYDROCYANIC GAS: *J. E.* You will find an article on the subject by Mr. Hawes, Superintendent, Royal Botanic Gardens, Regent's Park, in our issue for April 23, 1904, p. 271. The proportions you used appear to have been correct.

FUNGUS: *R. S.* *Polyporus squamosus*—not edible.

MARKET GARDEN: *Reader*. We think you should consult a solicitor.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—*J. S.* 1, Lady Sudeley (a very fine fruit); 2, Lane's Prince Albert.—*R. J.* 1, Tower of Glamis; 2, Christmas Pearmain; 3, Warner's King; 4, Lady Henniker; 5, Oslin; 6, Winter Greening.—*H. F.* 1, not recognised; 2, Northern Dumplin.—*G. S.* Norfolk Beefing.—*G. P.* 1, Yorkshire Beauty; 2, Prince Arthur; 3, Bess Pool; 5, Winter Hawthornden; 4 and 6, very small—not recognised.—*J. S.* 1, Broad Eye; 2, Stirling Castle.—*Dave*. 1, Pershore; 2, Jefferson; 3, Coe's Golden Drop; 4, Bryanston Gage; 5, Magnum Bonum; 6, not recognised. We consider this a very poor sort, compared with the many delicious varieties now in season.—*W. E. Garston*. 1, Scarlet Pearmain; 2, Grange's Pearmain; 3, Grenadier; 4, Kerry Pippin; 5, Blenheim Orange Pippin; 6, Newton Wonder.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number*.—*E. A.* *Eccremocarpus scaber*.—*T. P.* *Clarkia pulchella*, an annual; sow early in spring.—*R. T.*, *Epsom*. *Odontoglossum Hunnewellianum*.—*Japonica*. *Dendrobium Pierardii*.—*E. J. T.* *Calycanthus floridus*, *Botanical Magazine*, t. 503.—*R. J. W.* 1, *Statice sinuata*; 2, *Statice latifolia*.—*E. J. W.* 1, *Selaginella involvens*; 2, *Erythrina crista-galli*; 3, *Adiantum decorum*; 4, *Pilea muscosa*; 5, *Begonia parviflora* (Dregei); 6, *Begonia Weltoniensis*; 7, *Adiantum gracilimum*; 8, *Adiantum Walcottii*.—*R. N. H.*, *Sodbury*. 1, *Oncidium Mantinii*; 2, *Oncidium crispum*; 3, *Oncidium microchilum*; 4, *Pholidota obovata*;

5, *Cymbidium aloifolium*.—*Fitis*. 1, *Stelis ophioglossoides*; 2, *Restrepia maculata*; 3, *Pleurothallis macroblepharis*; 4, *Oncidium Schlimii*; 5, *Oncidium Limminghei*; 6, *Bulbophyllum modestum*.—*E. J. Speldhurst*. *Crinum Moorei*, an African Amaryllid. Place the plant in the open air, and keep the roots dry until frosts occur, then return to the greenhouse. It is quite hardy if planted deep at the foot of a wall and left undisturbed. Offsets may be so planted.—*H. W. W.* *Lycopus europaeus*.—*B. P. S.* The smaller plant is *Crepis virens*. The other specimen with numerous hairs on the leaves, &c., is a species of *Hieracium*, probably *H. Pilosella*. To destroy them place common salt or a few drops of sulphuric acid in the centre of the plants.—*J. B.* There is little doubt but the fruits are those of *Lycium chinense*; but no leaves were sent, as they should have been.

OPEN SPACES: *P. A.* Edinburgh contains about thirty parks, gardens, and open spaces, having a combined area of at least 600 acres. Glasgow has fifteen parks, which together have an area of more than 1,000 acres, besides several minor open spaces. You will find a detailed account of the parks and open spaces in these cities in our issues for November 23 and 30, and December 14, 1901.

PEACHES: *Peachstone*. We expect your soil is deficient in lime, which is a very necessary constituent in the case of all "stone" fruits. Add a little during the coming autumn or winter.

TOMATO: *C. E. C.* There is no trace of fungi or insects in either leaves or fruit. The injury must be due to some unsuitable condition in the surroundings which has bleached the leaves. There is no organic disease found in the specimens. *M. C. C.*—*C. S.* There are no fungi present in the foliage, and nothing to indicate disease of any kind. The foliage of Tomatoes frequently assumes a similar appearance to that of your specimens at the end of the season, especially if cultivated out-of-doors.

VINE-LEAF PROTOMYCES: *Anxious*. The Vine-leaves sent are sprinkled on the under surface with minute brownish granular warts, the internal structure of which is simply cellular, but may develop more in a short time. This unique appearance seems to be caused by some species of Protomyces, species of which have been found on the leaves of various plants, but not hitherto, as far as we can ascertain, upon the Vine. None of the species known are regarded as destructive parasites or pests, but simply as obscure developments, the history of which is comparatively unknown. There is no cause for anxiety or alarm. It may be called, provisionally, *Protomyces vitis*. *M. C. C.*

WORMS IN BOWLING-GREEN: *W. H. H.* Dissolve half an ounce of corrosive sublimate (*Poison*) in 15 gallons of water, and apply it over the lawn, and when the worms come to the surface sweep them up. If fowls eat them they will be poisoned. This mixture will not be of manurial value to the grass, but you might apply a dressing of bone-meal. We may add that a preparation known as "Chinese Worm Soap" is sold by Messrs. Cooper, Taber & Co., Ltd., Southwark Street, London, and we have found this preparation extremely effective in bringing worms to the surface, and in this case they may be swept up and given to the poultry.

COMMUNICATIONS RECEIVED.—King's Acro Nursery Co.,—H. S.—W. W. & Co.—L. H.—H. J. C.—J. P. W.—E. G. F.—R. R.—J. C. T.—J. S. & Sons.—H. R. G. (next week).—J. G.—J. C. & Sons.—C. H.—Arboretum.—Lochness.—R. W. G.—Bucks.—A. C. H.—B. A.—K. Y.—Japanica.—F. McD.—J. H.—W. C.—W. H. E.—F. H.—G. F. H.—J. W.—J. M.—Quintin Reed.—F. Mason G.—Fraddell & Young.—F. R., Quendlinburg.—O. B., Düsseldorf.—Reader.—P. M.—Dr. M. C. C.—W. B., St. Louis.—T. D. E.—Sir C. D.—W. B.—H. & Sons.—T. S., Newry.—J. V. & Sons.—Enquirer.—F. V. T.—C. P. R., Kew.—W. G. S.—H. J. W.—W. H.—H. W.—W. C.—W. H. Long.—A. D.—S. A.—The Fruitarian Society.—E. M.—Hon. F. Wolseley.—J. E., Colombo.—Expert.

DIED: WRATHIER.—On August 24, at York, suddenly, ROSE, the beloved wife of A. WRATHIER, gardener, Acomb Hall, Acomb, York.



GLORIOSA LEOPOLDI; FLOWERS YELLOW.

THE

Gardeners' Chronicle

No. 925.—SATURDAY, Sept. 17, 1904.

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IN THE WILDS OF VENEZUELA.

A VERY fascinating book of travel has lain on our table for some time awaiting an opportunity for us to call the attention of our readers to it.* The author is a native of Trinidad, who has for some years employed himself as a collector of Orchids and other objects of natural history.

The narrative of his various expeditions as given in this volume is full of incidents and records of perilous adventure. The area of the author's wanderings comprises the delta of the Orinoco, Central Venezuela, British Guiana, and East Brazil. The adventures of Raleigh, the quest for the golden city of Manoa, the dissipation of the legends connected with Eldorado by Humboldt in the early part of the last century, are all briefly alluded to. Then follows a description of a vast, well-nigh impenetrable forest, interspersed with open savannahs and mountains of fantastic shape and surpassing grandeur, thinly populated, difficult

of access, and deadly in climate, but rich in birds and insects.

Hereabouts Raleigh met with, or rather heard of, a tribe whose heads appear not above their shoulders, or, as Shakspeare has it, whose "heads do grow beneath their shoulders" (*Othello*, I, 3). Of the collecting of the fragrant Tonga-Bean we may say more on another occasion, as also on the preparation of rubber. The quest for osprey feathers is an industry so cruel in its practices that, could ladies be made acquainted with them, they would surely not sanction their perpetration. Our concern is chiefly with the Orchids. It may interest our readers to cite sundry passages relating to them:—

"Several kinds of Orchids are met with in such places. Some grow on the rocks alone, while others occur only on the moss-covered branches of the stunted trees, all knotted and gnarled peculiar to this vegetation. *Cattleya superba* and *Epidendrum Stamfordianum*, both of which are abundant in these places, attach themselves to trees and rocks. In the case of the former Orchid, however, only a small number of plants are seen on the rocks, by far the greater proportion being found on the branches or trunks of trees. It is the opposite with *Epidendrum Stamfordianum*, which grows in such luxuriant profusion all over the rocks in certain parts of the lasas that thousands of plants might be collected in the course of a single day. A very fine *Oncidium* and a large *Catasetum* also formed part of this flora, but while the *Catasetum* is fairly abundant, the *Oncidium* is rather rare. *Epidendrum elongatum* is another Orchid which grows in large masses on the lasas, some of the masses being several square yards in extent. As this *Epidendrum* is very free in blooming, and its flowers vary in shade from light pink to the darkest scarlet, the effect produced by the brightness of colour against the sombre background of black granite is striking. I seldom saw any Orchids in the forest itself, but wherever there happened to be open spots of granite or sandstone formation, Orchids and flowering shrubs were plentiful. . . . Many of these rocks supported magnificent masses of *Cyrtopodium Andersonii* and *Epidendrum elongatum*. Both Orchids were in full bloom at the time of our visit, so were many plants of *Cattleya superba*, which is exceedingly abundant on the stunted, moss-covered trees on the rocky islands and banks of the Caura. . . . Perhaps there is no more remarkable instance of the attribute of certain insects of arriving at, in a manner incomprehensible to us, some object necessary for the perpetuation of their species or advantageous to their welfare than the visits paid by a large bee to one of our commonest Orchids (*Catasetum tridentatum*). This bee, which Darwin describes as an *Englossa*, is rarely seen except when the *Catasetum* is in bloom. But then it does not matter where one of these plants may be, the bees are sure to find it out. They appear as if by magic in small swarms of five or six, or even ten individuals, as soon as the buds expand, and they will continue their visits, returning every morning to feast on the thick, viscid stuff distilled by the flowers during the night. In their struggles to get at the nectar they are so passionately fond of they disturb the highly sensitive pollinia, which fly out and attach themselves by a sticky disc to the heads of their voracious guests. Should the bee afterwards visit a female flower with his burden of pollinia, he repays the hospitality he has enjoyed by assisting in the propagation of the *Catasetum*, whose flowers will at some future period furnish a delicacy for his descendants, while ensuring the perpetuation of their species."

Those to whom a thrilling narrative appeals should read the account which tells of eight starving human beings whirled into the Ariehi and shipwrecked in its rapids. All the collections and provisions were lost, and escape was only secured by a march for twenty-six days through the forest till a settlement was reached. No wonder some of the party failed to reach their destination and were lost to their companions.

The book is so full of reference to natural history subjects that it ranks among the most interesting and valuable of its class.

THE ROYAL GARDENS, WINDSOR.

THE process of transformation at these gardens still goes on, and will probably continue for yet another year, so great is the change that is being effected. When all the renovations are completed, the Royal Gardens will probably have no equal for completeness and for excellence in every department in the whole world. It is fitting that the King of Great Britain should possess the best possible garden. It is also well that comparative experiments in the art of heating huge ranges of houses should be carried out under Royal ægis, because others may, if they find the result to be all that is anticipated, both admire and copy. Those who have not visited Frogmore for two years would scarcely know the place were they to see it now. It will be still more difficult of recognition a year or two hence, when all is complete. Old ranges of lean-to Grape, Peach, and other fruit-houses have been swept away, and others loftier, broader, and nobler in appearance have been erected in their places. Antiquated span-roofed houses have disappeared, and scores of handsome, light, graceful spans have taken their places. Old sheds, stores, or fruit-rooms, all so unfit and out of place in a Royal garden, have in one half been renewed and replaced by others that are up to date, light, roomy, and admirably fitted. The other half will soon undergo the same change. The whole of the ranges of cross span-roofed houses, twenty-seven in number, will in time be connected on the north ends with a noble, lofty glass corridor. In the entire scheme nothing has been left to chance, but all will prove to be one great harmonious whole.

But if all this noble town of glass be provided, what of the contents?—for it is by the contents that the gardeners' skill is tested. Of those it is enough to say that they show evidence of the highest skill in cultivation. There are houses full of *Cattleyas*, *Odontoglossums*, *Calanthes*, *Dendrobiums*, *Cypripediums*, and other Orchids, in superb condition; *Begonia Gloire de Lorraine* in 5-inch pots almost by thousands, of the most perfect form. There are also other houses full of perpetual-flowering and "Malmaison" Carnations, clean and in fine condition. Others contain in great quantity young plants of *Clerodendron fallax*, *Poinsettias*, *Azaleas*, *Gardenias*, room, table, or foliage plants, Ferns, Primulas, Cyclamen, and so on, in great profusion. Tomatoes are grown in exceeding abundance, especially the variety *Frogmore Prolific*, so well named, and a new dwarf crimson-fruited variety that is a wonderful cropper.

Old vineries and fruit-houses having been cleared away, new and lofty houses have been planted with Vines, Peaches, and other fruit trees. Some of the old houses contain great crops of these fruits, though more, and notably two large vineries, will soon be removed to make room for a new glass corridor. Everything newly planted is succeeding splendidly, yet in no case shows

* *A Naturalist in the Guianas*, by EUGÈNE ANDRÉ . . . with a preface by Dr. J. SCOTT KELTIE, with thirty-four illustrations and a map (SMITH, ELDER & Co.).

excessive growth. After three years the Frogmore Vines should produce grand Grapes, as probably they will.

Outdoors there are wonderful crops of Apples and Pears, such as can scarcely be excelled anywhere, and the huge areas of vegetables in the open quarters, Potatos, Celery, Seakale, Asparagus, Onions, Beet, and other crops are as good as they could be. These things serve to show that even if a Royal purse can erect the finest of glass-houses and obtain all essentials money can purchase, in gardening the brains of able gardeners control the whole. The herbaceous borders facing each side of the broad entrance road, each 1,000 feet long and some 12 feet wide, are aglow with flowers and full of beauty. Few finer hardy plant borders so rich in flowers can just now be seen. The glass-houses are heated by two groups of three tubular boilers—one, the central in each group, being a reserve. The system of heating is at once perfect and efficient, the long ranges of piping being carried through long tunnels, yet the heating power in the houses is abundant. Economy and efficiency are thus combined. A. D.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM ASPIDORHINUM.

This elegant *Odontoglossum* was discovered on the eastern slopes of the western Andes of the Cauca, Colombia, alt. 2,200 to 2,500 metres, by the late F. C. Lehmann, whose description was published in the *Gardeners' Chronicle*, September 28, 1895, p. 356, a small consignment of the plants arriving about the same time; and it has not been found by any other traveller, or at least not again imported.

In Mr. Lehmann's description the great floriferousness of the plant is mentioned, and the fact that the same pseudo-bulbs continue to produce two or three flower-spikes for several years in succession, a new feature in the genus. Under cultivation it retains the grace and peculiarities described. In the gardens of T. F. Blackwell, Esq., The Cedars, Harrow Weald (gr., Mr. J. Dinsmore), several compact plants have annually produced a dozen or more graceful spikes of flowers, and are now again in bloom.

A NEW TOMATO.

Of Tomatos, like books, there is no end in the making, and of the former it may be added that fresh introductions have but a poor chance of general approval unless they possess exceptional merit. The variety illustrated at fig. 76 was raised by the Rev. G. T. Laycock, of Terwick Rectory, Petersfield, who enjoys a world-wide reputation for his prize poultry, and who has chosen to name this Tomato after himself, "The Reverend Laycock."

It originated some six years ago. One single plant was found growing in a house with a thousand others, and its fruits were of such beautiful shape they attracted attention. On this one plant the fruits, though so shapely, were extremely small and almost seedless, so much so that only few seeds could be obtained, but such as were saved were duly sown the next season. With judicious cultivation the fruits resulting were considerably larger, whilst the characteristic shape was in no way impaired. Since then Mr. Laycock has crossed it two or three times with suitable varieties, and the result is an exceptionally handsome Tomato. The fruit is further characterised by great fleshiness, fewness of seed, fineness of skin, and excellence of flavour, whilst its beautiful colour when fully ripe can only be compared to a smooth ball of shining mahogany. Its eye is oftentimes as fine as a pin's-point, and

never large and unsightly; and as the fruit is absolutely free from any degree of hollowness, it not only proves pleasing to the eye but weighs well. The average size of the fruit under ordinary cultivation is that shown by our illustration, but when the plants are fed liberally the fruits become double as large in size. It is a good setter, a free bearer, and the fruits on a bunch swell together, and not just one, two, or three at a time, as is the case with some varieties. Mr. Laycock has counted as many as fifteen splendid fruits on a single bunch, not one being less in size than the trio shown in the illustration, which has been prepared from a photograph by Mr. F. de la Coze, of Midhurst, Sussex.

the neighbourhood of a frequent but intermittent supply of water.

Meconopsis integrifolia is not a Himalayan plant. Its habitat is the high mountainous regions of China and Tibet. The seeds from which the plants were raised were gathered by the Koslov Expedition sent by the Russian Government to Central Asia.

Other rare *Meconopsis* in Messrs. Bee's nursery are the tall-flowered *M. grandis*, the variable *M. racemosa*, with flowers shading from deep purple to palest lilac; and seedlings of the rare *M. bella*. The last-mentioned is considered by those persons who have seen it on its native rocks to be the most beautiful of all Himalayan plants. Unfortunately it has proved impossible



FIG. 76.—TOMATO "THE REVEREND LAYCOCK."

HERBACEOUS BORDER.

MECONOPSIS INTEGRIFOLIA.

This plant is now in flower in Messrs. Bee's nursery at Neston, and although the flower is 4 inches across, the plant itself has more the appearance of an alpine plant. The soft, hairy leaves are lanceolate, entire, and so far have not exceeded a maximum length of 12 inches. The flowers, each borne on a stout peduncle, 12 to 14 inches in length, are of a delicate, soft yellow colour, and rise in succession from the thick tuft of leaves, different from other Eastern members of the genus, so that it is expected to prove a perennial plant; and its present habit and appearance almost confirm this belief. Messrs. Bee only planted one specimen out-of-doors last winter, and curiously enough this plant flowered, while the others, carefully tended in pots under glass, failed to do so. The plant outside is growing in a shady position under a north hedge, in

so far in this country to raise plants past the seedling stage. In its natural habitat it grows on wet rocks, constantly surrounded by cloud and mist, but never getting direct rain. These conditions it seems impossible to reproduce. Wm. Coutts.

LUPINUS CRUIKSHANKII.

This particularly handsome *Lupinus* is now in flower here, and a colony of some twenty plants is affording a fine display. The long flower-spikes, with their deep blue, yellow, and white blossoms, are very effective, and from the number of side-shoots being thrown out, the flowering period promises to be a very lengthened one. This *Lupinus* is said to be a form of *L. mutabilis*, and appears generally to be treated as an annual. The gardening dictionaries, however, class it as a half-hardy evergreen. This is the first year that I have grown it, having raised it from seeds sown in the open in April; but it is possible that, in common with certain other Peruvian plants, it may pass through the winter unharmed. The

Mexican *Hunnemannia fumariifolia*, almost invariably treated as an annual, is now a fine bush with me, over 2 feet in height and as much through, and is bearing numbers of its large, handsome, yellow-coloured flowers. This plant was entirely unprotected last winter. *S. W. Fitzherbert, South Devon.*

A TOPICAL FLOWER-BED.

GARDENERS have often utilised their flower-beds to illustrate topical and other events, and a very interesting display, suggested by the unfortunate war in the far East, may be seen at the present time in the Recreation Ground at Penge, near London, in which the plants are so arranged

THE LILY SEASON.

THIS season has been highly favourable for the growth and development of the majority of garden flowers, and especially of Oriental and Occidental Lilies. Flowers of this semi-tropical character require, as a rule, abundant moisture, and during the past summer they have received ample justice from Nature in this direction. She has also been almost prodigal of sunlight—an element of the utmost importance for adequate and successful cultivation. During last year the sun was "conspicuous by his absence"; nevertheless, wherever they received the most ordinary attention, Lilies were so successful as to astonish their cultivators. This, doubtless, was

incurring the one by the avoidance of the other, thus emphasizing horticulturally the memorable aphorism of Alexander Pope: "Man never is, but always to be bless'd."

Of the Lilies that have this season completely eclipsed all their previous achievements, *Lilium monadelphum* var. *Szovitsianum* and *L. Henryi* come easily first. These have reached here a height of nearly 8 feet, and one strong specimen of the Chinese Lily, at present in splendid bloom, has produced thirty flowers. This fine Lily is somewhat arduous to classify; it has, indeed, been generally characterised as a dark yellow-coloured *speciosum*, but this is hardly an adequate description, for it has attributes



FIG. 77.—VIEW OF FLOWER-BED REPRESENTING THE JAPANESE FLAG IN THE PENGE RECREATION GROUND.

as to reproduce the design of the Japanese national flag (see fig. 77). We are indebted to the kindness of the Superintendent, Mr. William Waller, for the following description: "The bed itself is 24 feet in length, of which the flag occupies 9 feet. The portion representing the sun is planted with *Alternanthera versicolor*, and the rays with *A. sessilis amena*, the rays being divided from each other by plants of a species of *Antennaria*, while *Saxifragas* form an edging, the whole being surrounded by a broad band of the golden-leaved *Spergula*. The design at either end is planted with species of *Cotyledon*, *Crassula*, *Sempervivum*, *Herniaria glabra*, *Alternanthera paronychioides*, and *A. magnifica*. The bed was made with a slope towards the path, and the whole of the plants are well coloured." Our illustration is reproduced from a photograph by Mr. F. Wade.

largely owing to the superabundance of moisture, of which they can hardly have too much, unless, indeed, in winter, when it has a tendency to reduce to a minimum the vitality of their bulbs, especially those of such Lilies as *Lilium rubellum* and *L. Krameri*, which here have not seldom in this manner been entirely destroyed. These and several others of a miniature description are particularly liable to this premature destiny when planted too near the surface of the ground. On the other hand, as I have learned from long experience, many species, such as *Lilium longiflorum* and its numerous varieties, when planted too deeply, rapidly degenerate into a large number of minute bulbs, much too small to accomplish any floral results. So that in Lily-culture we frequently find ourselves between two great difficulties, inevitably

which can only be described as peculiarly its own. In any case it is an unquestionable acquisition, if only by reason of its vigorous growth, its distinctive colour, and floriferous capabilities. Its great rival in growth, the Lily of Mount Caucasus, to which I have referred, is equally aspiring and much more beautiful. The late Dr. Wallace, of Colchester, accounted *Lilium monadelphum* one of the grandest of Lilies, for he knew its powers of majestic growth when once strongly established, and its artistic impressiveness.

The earlier varieties of *Lilium auratum*, another commanding Lily (whose value, through familiarity, has become somewhat under-estimated), are already in bloom. *L. auratum platyphyllum* might be expected to develop grandly in such a season as this, and its growth has equalled our utmost anticipations; it is

nevertheless somewhat later than usual this year. Though this Lily grows taller and produces larger flowers than the older varieties, it has not the rich, lustrous beauty of these. The most distinctive of all the varieties of *L. auratum* is that of *rubro vittatum*. Here I much regret to add it is the least enduring of them all. I hope the variety is not so transitory elsewhere, for it is splendidly effective.

Lilium chalcedonicum has been finer this season than I have ever seen it before, and as much may be asserted of the richly spotted Panther Lily of California, *Lilium pardalinum*. The graceful Madonna Lily has also flowered well. On the other hand I have been greatly disappointed with *Lilium giganteum*, which, grown from offsets for the last four years in congenial soil, and receiving every possible attention, refused to bloom. This may have been owing partly to the adverse nature of atmospheric influences in the early spring, when its growth was already begun; it is possible that its immense bulbs may also have suffered deterioration from the sunless character of the season of last year. I am not greatly surprised to learn that in other gardens where this great Lily is extensively cultivated, it has manifested an equally deplorable capriciousness. It is undoubtedly a magnificent Lily, though somewhat unreliable, and I am not without hope that it will bloom here next year. Meanwhile the varieties of *L. auratum* and of *L. speciosum* are a gracious consolation. *David R. Williamson, Wigtonshire, N.B.*

NOTICES OF BOOKS.

TREES: A HANDBOOK OF FOREST-BOTANY FOR THE WOODLANDS AND LABORATORY. By H. Marshall Ward, Sc.D. Vol. I. Buds and Twigs. Cambridge University Press.

SOME time since, when noticing Dr. Rendle's *Classification of Flowering Plants*, we had occasion to note the gradual swing of the pendulum from histological and physiological botany to morphology and classification. It is a real misfortune to science that the happy medium is so seldom obtained. There can be little doubt, for instance, that the interests of morphological and taxonomic botany of late years have suffered from the too exclusive addiction to the details of minute anatomy, that students, medical men, and travellers are less well equipped in some particulars than their forefathers were. It is equally certain that science became more or less stagnant in former years by the neglect of these kinds of researches, which have of late so greatly enlarged our conceptions of plant-life. Professor Marshall Ward affords a happy illustration of the physiological botanist who is equally at home in morphology. We have had instances of this before in his useful book on Grasses, and now he supplies a little treatise which will be of the greatest service to students of trees and shrubs, to foresters and gardeners who desire to prune their trees on scientific principles rather than the rule of thumb.

He deals with buds, their form, position, and constitution, their prolongation into shoots, and the arrangement of the leaves as manifested even in winter by the leaf-scars. To the field botanist or the gardener the facts detailed will be familiar, but to the beginner this book will open up a comparatively new and most interesting subject of study, while its practical value to the forester or gardener is obvious.

Elaborate analytical tables are given for the purpose of facilitating the recognition of species, even when the leaves and flowers are absent. The value of these tables can, of course, only be fully estimated by use, but a glance at them is sufficient to show that they will be very service-

able for the purpose for which they are intended. The illustrations are numerous and particularly valuable for the student. We do not know of any treatise of the modest dimensions of this one which has so many or so characteristic illustrations. The book has a good index, but not a glossary, which might be added with advantage in a new edition. For the purposes of the student the book is excellent.

SMITH'S CHRYSANTHEMUM MANUAL.

This recent addition to the literature of the Chrysanthemum comes from the pen of Mr. Elmer D. Smith, who for a long time occupied the post of Secretary to the American Chrysanthemum Society. It is a handy little manual of about 80 pages, intended for the use of growers in America. It contains several figures in black-and-white, and as Mr. Smith is a well-known cultivator of twenty years' standing, all that he says may be considered essentially practical, especially when we remember the extent to which his firm has devoted its energies to the raising and importing of novelties in the States, and testing the many varieties from other growers in America.

Among the various subjects dealt with by Mr. Smith are chapters on propagation, specimen plants, exhibition blooms, insects, and various diseases. Each chapter has numerous sub-headings, in which many details relative to the heading are fully treated.

The work is published by Messrs. Nathan Smith & Son, of Adrian, Mich., U.S.A.

BULLETIN DE LA SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.

For the fifteenth year in succession the French Society of Gardeners in London has issued its annual Bulletin. The first series was replaced a few years ago by an issue in an enlarged form, and this usually contains an excellent portrait of some well-known horticultural celebrity, not necessarily French, for the society is cosmopolitan to a large extent, and always ready to render homage to any friend of the society, no matter what his nationality may be. This year as a frontispiece we have a capital portrait of the late M. Godefroy-Lebeuf, the original founder of our esteemed contemporary, *Le Jardin*.

We notice the lists of members are still increasing, several very well-known names being added this year. Finances are in a flourishing condition, and the library, a feature in most foreign horticultural societies, has received considerable additions from sympathetic members and friends.

The contents are similarly grouped to those of former issues. They are briefly the rules, officers, lists of members, and corresponding societies, reports of the monthly meetings and of the annual banquet, catalogue of the library, and the text of papers read at the meetings. The titles of a few of these are—Roses grown in pots, Asters, Collarette Dahlias, Claiemar Vineyard, Apple Culture in England, Alpine Flora. There are also several reviews of new books presented to the Society.

CHRYSANTHEMUMS.

By E. Hasler Potter.
(Dawbarn & Ward, London.)

A little sixpenny paper-covered treatise on the culture of the popular flower from the Far East. Sixty-odd pages of neatly printed matter and several interesting small illustrations combine to make a useful pamphlet that seems to deal with most of the subjects connected with the Chrysanthemum. Besides culture, there are some very good selections of varieties for various purposes.

THE ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY.

BEING interested in all that concerns horticulture, I determined to visit the new gardens, and judge for myself as to their suitability. Let me say at once that the munificent and well-timed gift of Sir Robert Hanbury, K.C.V.O., is, in my opinion, of inestimable value to the Society, and that the gardens will afford scope for carrying out its objects and plans for the promotion of horticulture.

Taking the 10.5 A.M. train from Waterloo, I soon found myself at Weybridge, and as I drove from the station past Hockham and Wisley Commons I noticed how refreshing was the scent of the Pines growing on each side of the road. On arriving at the gardens, I was agreeably surprised to find that the residence of the Superintendent, Mr. Wright, containing an office and commodious Council Chamber, was in course of completion. A range of glasshouses glittered in the sun, and works in connection with the water-supply and a certain portion of drainage were being pushed on for completion before winter.

The new houses have been specially designed for the purposes to which they are to be put. They are no higher than necessary, and are up-to-date in every respect. I believe a sub-committee of experienced members of the Council was appointed to advise as to the character of the buildings, and to some extent to superintend their construction. The work is being finished in the best manner, and none but the highest quality of glass is employed.

House No. 1, for the propagation of cool-house plants and hardening off, will be heated with raised pipes only, and not from below. Its dimensions are 80 by 30 feet.

House No. 2 is a similar one, intended also for propagating purposes, and is provided with bottom and top hot-water pipes.

House No. 3 is intended for the cultivation of Cucumbers, Melons, Tomatos, &c., and measures 100 by 30 feet, and is divided in the middle. In height it is about 14 feet to ridge.

No. 4 will be the Fig-house, and has the same length, breadth, and height as those of No. 3. There is ventilation at the top on both sides, and the side-sashes are made to swing. The centre-bed will be filled with "plunging" material, and there will be side-stages for pot Figs. These stages are about 4 feet high, and made of corrugated iron and have iron supports; no wood is used for such purposes.

House No. 5 has similar dimensions, but consists of three divisions built on arches to admit of internal and external borders, which have yet to be made. There is slight side ventilation near to the hot-water pipes. There are training-wires 19 inches from the glass and 9 inches apart. The iron gearing throughout these houses is painted a soft green colour, which has a pleasing effect.

House No. 6 is also 100 feet long, but 10 feet narrower than the rest, and is divided in the middle so as to serve for stove and cool-house plants.

House No. 7 is intended for Peaches and Nectarines, and is of the same length and breadth to that described last.

There are three rows of brick pits 100 by 6 feet—one a cold pit and the other two heated.

A considerable quantity of yellow loam will have to be purchased for the Vine-borders, but the garden soil consists of good light loam, in which nearly everything appears to thrive. The vegetables are good, and flowers have stood the dry weather of August well without artificial waterings. Violas especially surprised me by their fresh appearance. The worst soil is at the entrance, round the Superintendent's house, and the best is near the river and in the wild-garden.

The Royal Horticultural Society, being now one of the principal freeholders in the district,

has probably valuable common rights. Good bog-earth and fairly good peat are to be found on Wisley Common, and the extent of these rights should be ascertained.

Although the soil is rather light for Apples, the trees that Mr. Wilson, V.M.H., planted are bearing well; but the land near the river Wey is not suitable for fruit-growing, although the soil is good, as there would be danger from spring frosts. It would, however, be an admirable position for a pinetum, the formation of which has, I believe, been discussed.

THE WILD-GARDEN

was the great attraction to me, as it will doubtless be to others. It is unique. Nature has done much for it by furnishing Oak and other timber trees, that have enriched the soil with leaves, and furnished sufficient shade to encourage

choice British Ferns recently presented to the Society by Mr. C. T. Drury, V.M.H., were succeeding well in congenial quarters.

All who visit the new gardens should allow themselves a day's holiday for this purpose, as there is so much to see. Wisley is a charming place for a week-end visit, and good quarters can be found at the "Hut" Hotel. The Superintendent and his assistant are eager to point out everything of interest under their care in the gardens, and to make the visit as agreeable as possible. *W. Roupell.*

SINNINGIA REGINA.

THE subject of our illustration at fig. 78 was one of the new plants exhibited by M. de Smet-Duvivier at the Ghent Quinquennial Show of 1903 under the name of "*Gesneria Regina*." A plant was subsequently sent to Kew, where it was

close together on the stem, the effect therefore is that of two many-flowered whorls, and is very fine. The duration of the flowering period is about six weeks. We are indebted for our illustration to Mr. Ernest Benary, of Erfurt, Germany, who has acquired the stock of this pretty plant, that is so likely to become a favourite in gardens.

THE HOUSING OF PLANTS.

THE time is approaching when half-hardy plants must be afforded protection under glass, for towards the end of September frosts may appear at any time that would occasion much loss. Although our decorative houses may be particularly bright at the present time with their summer occupants, space must be prepared for those plants needed to furnish a display throughout the autumn and early winter months.



FIG. 78.—*SINNINGIA REGINA*: COLOUR OF FLOWERS PALE LILAC.

Ferns, Mosses, and other shade-loving plants to grow luxuriantly. But the hand of Geo. Wilson is evident everywhere, and his spirit seems to pervade the place. The nesting-boxes that he placed for the birds are still where he put them, and his feathered friends use them. Rare shrubs, Bamboos, Camellias, Japanese Lilies, Irises, and countless other choice plants arrest the eye. There are masses of *Pernettyas* profusely covered with delicately-tinted berries that look like large Heather-bells. *Rosa rugosa* is laden with berries, and glews in the autumn sun. Vistas between the shrubs are made enchanting beyond conception by long, drooping sheaves of *Gentian Asclepiadea*, both purple and white; Irish Heath, blooming as I have never seen it before; Water-Lilies growing up above the water with healthy vigour. Everything appears to be in perfect health, and I was glad to see that the

found to be a species of *Sinningia* ("*Gloxinia*" of gardens), allied to *S. discolor* and *S. Menziesiana*. *S. Regina* is reported to have been introduced with a *Cattleya* from Brazil, but until this is confirmed by properly authenticated wild specimens, the possibility of a hybrid origin cannot be excluded. A botanical description of this plant, together with much information upon the relation of *S. speciosa* to our modern *Gloxinias*, was published upon pp. 87 and 88 of the issue of the *Gardeners' Chronicle* for August 6 last. The plants grow about 9 inches high, and have dark green, velvety leaves, which are purple-coloured on the under surface. The flowers are of pale violet colour and drooping, and are borne on long flower-stalks, four to six together in the axil of each leaf. The writer of the article already mentioned stated that two successive pairs of leaves are usually

Before removing the plants into their winter quarters, thoroughly wash the houses inside and outside, including all glass and woodwork, and if it is necessary lime-wash the walls afresh; also wash all flower-pots; clean the surface of the soil in the pots, and see that the drainage is clear. Plants that have been subjected to night dews as well as rain, when housed in a close, dry atmosphere, often lose much of their foliage. This can be averted to a great extent by lightly syringing the plants overhead in the morning and early afternoon, and maintaining plenty of ventilation throughout the day, with a lesser amount during the night.

Bouvardias, *Carnations*, *Salvias*, *Richardias*, *Libonias*, *Marguerites*, and *Eupatoriums* may be injured by only a few degrees of frost, consequently these plants must be the first to receive attention, but *Zonal Pelargoniums*, *Coronillas*

Cytisus, Solanums, and Azaleas can remain out-of-doors until well into October, and with the exception of Pelargoniums, a little frost will benefit the plants. Camellias are quite hardy, and although it is not wise to allow the soil to become frozen in the pots or tubs, still the cooler these plants are kept during the winter the more satisfactory they will flower in early spring. One reason for not leaving pot-plants out-of-doors late in the summer is that the frequent heavy rains often obtaining in September and October, in a season when growth is finished and the roots are dormant, are injurious. This injury can be partly averted by laying the smaller plants on their sides when heavy rains threaten. Chrysanthemums require shelter as soon as the flower-buds exhibit signs of bursting, especially those grown to produce large blooms, but late varieties should be kept out-of-doors as long as possible to retard their flowers, and if some kind of awning is erected over them on frosty nights, the plants will be safe until the frosts occur sufficient to enter the pots, when it will be time to remove them under glass. Tender subjects in unheated pits and frames, as Poinsettias, Eranthemums, Plumbagos, Centrapogons, Browallias, Begonias, &c., should be placed in light, airy positions and where a little fire-heat can be turned on during cold nights. Cyclamen, Primulas, &c., may in some seasons be kept under frames protected by mats at night until the middle of October, and Cinerarias and Calceolarias as late as the middle of November, but frost must be kept from the plants. The houses and pits must be fumigated directly aphids makes its appearance upon the plants after their removal indoors. *James Mayne.*

THE SPECIES OF CHAMÆDorea WITH SIMPLE LEAVES.

THERE are few genera of Palms which have as many species as the genus *Chamædorea*, and of these few hardly one is represented in our gardens by as many species as is this Central American genus. Indeed, there are not many Palms which can be so easily grown either in the nursery or under glass, or even in living rooms. Though dioecious, they are easily propagated by seeds, and in two years grow up into fine plants. Only a few attain to a great height; most of them are middle-sized, and grow for many years in houses 10–12 feet in height. Some species are quite dwarf; indeed, one of them, which I found some time ago in the herbarium of Capt. John Donnell Smith, of Baltimore, is the most dwarf Palm I know, as it has attained a height of some inches only. *Chamædoreas* are exceptionally disposed to cross-fertilisation, so that anyone fond of cross-breeding should be very successful with them. Composite hybrids with four species commingled may also easily be grown. Some of these hybrids are distinguished for their very rapid growth. As in our gardens fresh seeds are imported from their native country only, a good many of the plants cultivated may be of hybrid origin. It is very difficult, if not impossible, to determine these with certainty. My dear old friend, Herman Wendland, certainly had an excellent knowledge of *Chamædoreas*, but whenever I showed him a hybrid he would say, "Let it go; the *Chamædoreas* are like the dogs." He declined to try to determine hybrids of *Chamædorea*, as it was impossible to tell their parentage.

It is not, however, necessary to grow hybrids, as there is enough variability in this genus to give satisfaction to any lover of variety. Notwithstanding, the species may easily be determined even if not flowering. Unfortunately, some of them, though long in cultivation, have never been described anywhere. Wendland intended to write a monograph of this genus, and he began the work two or three times. But he never completed it. At last he gave me

all his manuscripts, and said I might make use of them. From these manuscripts I extracted first a key to the species and laid it before him. He accepted it with some brief corrections and additions. I will give in the following lines an enumeration of the species with simple leaves so far known, with short descriptions. I may add that I have compared all these with the types in Wendland's herbarium. A full monograph of the genus will appear shortly.

The leaves of *Chamædorea* are all divided at the apex, like most young leaves of the *Arecinæe*. Eleven species always retain these simple or bifid leaves, all the others have pinnate leaves when fully grown. So we have two groups: (a) *Chamædoreas* with simple leaves, which are only bifid at the apex; and (b) *Chamædoreas* with pinnate leaves. The species of the group a may be divided again into two sections, including (1) those that have a simple stem; (2) those that have a stoloniferous stem. The species of section 1 may be further divided by the number of their primary veins—viz. (a), those with ten to twenty primary veins on each side of the midrib; and (b) those with nineteen to twenty-four veins on each side of the midrib. Of course the veins on full-grown plants must be counted only. The number is invariable in species of *Chamædorea*, as well as in those of some other genera of Palms. The leaves, with ten to twenty primary veins, are either obovate or oblong or elliptical; four species have obovate or oblong leaves: *C. tenella*, *C. geonomiformis*, *C. Ernesti Angusti*, and *C. rigida*; whilst elliptical leaves are characteristic of *Chamædorea pumila*. Three species have leaves with nineteen to twenty-four primary veins on each side of the midrib: *C. amabilis*, *C. Lechleriana*, and *C. Deckeriana*. We have also amongst the simple leaved species those with stoloniferous stems (a, 2). These are *C. stolonifera*, *C. Pavoniana*, and *C. Ruizii*.

1. *C. (Euchamædorea) tenella*, Wendland, in *Gartenflora*, 1880, p. 102.—This dwarf species was introduced from Mexico by Ortgies. Living plants are now, as far as I know, seldom to be met with. The remotely-annulate stem attains a height of about 1 m., is about 5–6 mm. thick, the annulated cicatrices of the fallen leaves about 2 cm. distant each from the other. The stem bears a crown of about eight leaves, which have a total length of 20 cm. Of these 20 cm., 5 cm. are of the cylindrical erectly opened sheath; 1–2 cm. belong to the petiole, which often is almost wanting, and only 2–3 mm. thick. The lamina has a length of 15 cm., it is 6–10 cm. broad, bright green, strong, oblong-elliptical, rounded at the base, seldom cuneate-attenuate, at the apex shortly incised; the main rachis is 10–12 cm. long, and has on each side eleven to twelve primary veins, each 6–8 mm. distant from the other. The outer margin is crenulate-toothed almost to the base; the inner margin 4–5 cm. long, entire. The spadix is simple.

2. *C. (Euchamædorea) geonomiformis*, Wendland.*—This fine Palm is somewhat larger in its dimensions than the former. It has been introduced at different times and under different names. Wendland found a male specimen in 1849 in Van Houtte's establishment at Ghent, under the name *Geonoma fenestrata*. In 1848 Mr. Allardt, at Berlin, received from von Warszewicz seeds of this Palm from Guatemala, and called it *Chamædorea humilis* or *Geonoma humilis*. It seems that this species flowers early, as I find by a note in *Allg. Gartenz.*, January 26, 1850, that the seedlings of this Palm, though they had made but six to seven leaves, were already flowering, the first spadix appearing in the axil of the third, the second in the axil of the fifth leaf. Wendland tells us that he succeeded in propagating the plant by a head-cutting. This species is still

* Otto & Dietrich, *Allg. Gartenz.*, 1852, p. 1.

to be found in some of the larger collections, and seeds were lately brought into commerce by Haage & Schmidt, of Erfurt. It is distributed throughout eastern Guatemala. The stem is erect, about 1–2 m. long, 13–15 mm. thick, densely annulated, the annulated cicatrices 8–13 mm. distant each from each. The stem bears a crown of six to eight leaves, which are 30–50 cm. long. Of this length of 30–50 cm., 6–8 cm. belong to the cylindrical sheath, and 15–25 mm. to the short petiole. The lamina has a length of 25–35 cm., it is 10–16 cm. broad, thin, oblong or obovate oblong, often cuneate-angustate at the base; at the apex incised to $\frac{1}{3}$ – $\frac{2}{3}$. The main rachis bears ten to thirteen primary veins on each side. The two lobes at the apex are elongate-oblong acuminate. The outer margin is slightly repandocrenate. The spadix of the female plant is simple, that of the male divided into four to six densely-flowered rami. *Dr. Udo Dammer, Dahlem, near Berlin.*

(To be continued.)

PLANT NOTES.

DEUTZIA KALMIÆFLORA: HYBRID DEUTZIAS.

THIS beautiful shrub deserves to be more widely known, and might well be given a place in gardens when autumn planting comes round. It is included in the Kew Arboretum, and the name appears in the most recent edition of the *Hand-List of Trees and Shrubs*, with Lemoine as the authority. Its origin is given as being from *D. gracilis purpurascens* crossed with *D. parviflora*. I do not know a variety of *D. gracilis* bearing the name given, nor is one mentioned in the list referred to, except in this case. Messrs. Veitch state that *D. kalmiæflora* was raised "by M. Lemoine, of Nancy, by crossing *D. parviflora* with the Chinese species, *D. discolor purpurascens*." It would be interesting to know which of these statements is correct, and if by any chance an oversight has occurred in the Kew list. If, as seems probable, *D. discolor purpurascens* is one of the parents, Messrs. Veitch and the Kew list again differ as to which was employed as the pollen plant. *D. Lemoinei*, another beautiful hybrid from the same raiser, is better known, and its floriferous habit will always ensure it a certain measure of favour. It was obtained from crossing *D. gracilis* with *D. parviflora*. *D. gracilis* var. *campanulata*, raised from *D. gracilis* crossed with *D. discolor* var. *purpurascens*, I have not seen in flower, but it is described as a greatly improved form of *D. gracilis*. *Lewis Castle.*

ST. LOUIS EXHIBITION.

THE OLD ENGLISH GARDEN.—Amongst the gardens at the St. Louis Exhibition that of Great Britain is unique in two respects—first, in regard to its mode of arrangement; and, second, in regard to the class of material used. Our readers will probably be familiar with the general character of the garden from the plan published in the *Gardeners' Chronicle* for March 12. The sunken garden and fountain on the east of the building is, of course, the main feature of the grounds. The fountain plays between 8 a.m. and 6 p.m., and adds greatly to the appearance of the garden. The corner piers of the Lily-tanks have been ornamented with beautifully designed terra-cotta vases filled with plants of *Phoenix reclinata*, Ferns, *Vinca variegata*, *Asparagus Sprengeri*, &c. In the water is a collection of hardy and tender Nymphæas in flower, Water Hyacinths, Water Poppies, and other aquatics.

The hedge forming the enclosed spaces in the panels on each side of the fountain is of Californian Privet (*Ligustrum ovalifolium*), and where this has come thinly it has been covered

with Japanese varieties of *Ipomoea*, which make a beautiful display during the early part of the day. At the corners of the edge are standard plants of *Prunus Pissardi*, the dark purple foliage of which is very conspicuous over the green Privet.

The flower-beds are all rectangular in shape, and surrounded by an edging of *Kochia scoparia*, which makes a beautiful border, and very well fills the place of Box edging. Some 10,000 plants of this were used, the greater number having been raised from seeds sent by Messrs. H. Cannell & Sons, Swanley.

In keeping with the character of the garden, old-fashioned annual and herbaceous flowers were planted wherever practicable, and all carpet and modern bedding was avoided. In the sunken garden, Messrs. Sutton & Sons, Reading, have large beds of Zinnias, Balsams, Phlox Drum-

Salvia splendens, &c., form a background to the green. A row of Carolina Poplars is on each side of the garden, whilst a low hedge of Privet forms the boundary. In a border on each side of the sunken garden an exhibit of herbaceous plants from Messrs. Cannell & Sons is planted. Masses of *Helianthus rigidus* and *H. multiflorus* are in full bloom now.

In the border immediately in front of the pavilion terrace, Petunias from Messrs. Kelway & Sons are making a brilliant display. These have been greatly admired for the size of the flowers. Scattered about in the garden are sixty fine specimens of topiary work, exhibited by Messrs. Wm. Cutbush & Son, Highgate, who also exhibit a collection of Ivies. Mr. Amos Perry, of Winchmore Hill, London, has a very interesting lot of herbaceous and alpine plants. Some good collections of Dahlias are also shown in different parts

the Royal Horticultural Society is so well equipped with a Floral Hall of their own, and also with a fine garden, it is to be hoped they will do something better with regard to their students. The system in vogue at Chiswick will, I suppose, be continued at Wisley, but on an improved basis. What useful purpose can attracting students there serve if they are not to be given some advantages such as are provided at Swanley and other places? Little enough instruction was given at Chiswick in botany, chemistry, &c., and a lot of time in the gardens was really wasted. Young men from seventeen to twenty-two years of age, when serving their two years at Chiswick, often found part of the work they had to do was washing or crocking pots for the foremen to fill with plants, and other profitless work of this kind. That is not what they expected before going there! Some



FIG. 79.—ST. LOUIS EXHIBITION: VIEW IN THE OLD ENGLISH GARDEN.

mondi, Antirrhinums, &c., which are in full bloom now. Messrs. Carter & Co.'s exhibit of Gaillardias are also making a good display, and likewise their Montbretias.

An exhibit of some 4,000 tuberous-rooting Begonias belonging to Messrs. Sander & Sons, St. Albans, has just taken the place of other exhibits which were past blooming. The display commenced in March with Crocuses, followed by Hyacinths, Narcissi, Tulips, &c., which in their turn were succeeded by early-sown Stocks, Sweet Alyssum, Silene, English and Spanish Iris, Anemones, &c., after which came the main crop of flowers. Several beds of Violas shown by Mr. John Forbes, Hawick, are still in bloom, in spite of the hot weather at St. Louis.

The old-fashioned bowling-green, with its sloping sides and circular ends, excites the curiosity of the visitors. This and the shaded alley were sown with lawn grass-seeds supplied by Messrs. Sutton & Sons. Masses of flowering shrubs, amongst which are planted Cannas,

of the garden; but these do not bloom much at St. Louis until the cooler weather of the autumn encourages growth. *Correspondent, St. Louis, September 1.*

COLONIAL CORRESPONDENCE.

NOTES FROM CEYLON.

THE *Gardeners' Chronicle* is always welcomed here, and keeps one in touch more or less with what is going on in the world of horticulture at home. The number for July 2 now lying before me is particularly interesting. So old Chiswick is gone! I do not consider that this is much to be regretted, for apart from old associations and sentimentality it was not much of a place to constitute a representative garden of the Royal Horticultural Society, the most influential and largest society of its kind in the world, but Wisley seems, from accounts in the *Gardeners' Chronicle*, to be a first-rate garden. Now that

of the students had already completed two years each in good nurseries before going to Chiswick, and when there found themselves put back instead of progressing.

However, I must not continue grumbling, but I hope improvements will be made in this direction at Wisley if students, who will afterwards prove a credit to the place, are to be attracted there.

I see in the same issue several interesting notes from the pen of Mr. F. W. Fitzherbert. He is a keen observer, and his notes during his frequent wanderings from Torquay through the "west country" are appreciated by one hailing from that queen of watering-places. I see he makes a note of the prevalence of *Centranthus ruber* around Torquay. This Valerian grows more luxuriantly there than I have seen it anywhere else. Many high garden walls in that town of several hills have the red and white varieties growing upon them in profusion, and by a number of gardeners there it is accounted a

weed! Another plant growing far more freely there than in most places is the Tamarisk. I think it requires the sea air, for I once saw some plants at Chiswick, and they were in very feeble condition. The masses of sweet-smelling pink inflorescences amongst the dainty foliage makes it a charming shrub for seaside gardens.

A GARDEN IN COLOMBO.

Here the rainy season has lasted with us for an extended period. The rain in this tropical temperature has the effect of forcing vegetation tremendously, and after a month or two of the monsoon season most gardens require a deal of looking after with regard to pruning, &c. Codiaeums grow very freely here, and I have just had cut back considerably a fine hedge of these plants. They are very variable, and develop colour beautifully. Unless pruned regularly, these handsome foliage plants are liable to get scraggy and appear unsightly.

Coleus do remarkably well with us, and, when kept from flowering by judicious stopping of the shoots, develop into fine bushes; and their beauty when fully coloured in the sunlight after a shower of rain is wonderful. The Coleus is to my mind one of the handsomest of foliage plants—such fine blending of colours of the richest crimson, purple, brown, yellow, and green, with such velvet-like surfaces, are to be found in few other plants. A fine plant of Allamanda is growing over a table trellis-work of split Bamboos; it is a luxuriant grower, and requires frequently a severe cutting back. It was so treated a few weeks ago. I thought at first that the "toti karen" (garden coolie) had used his knife rather too severely; but now it is a mass of young bright green flowering shoots all over, and full of blossom and promise of blossom. The blooms are of large size, and these bright golden flowers make pretty table decorations.

Grouped along the front of the verandah are pots of foliage plants, including Adiantum Farleyense, Calocasias, Caladiums, Alocasia metallica, and other foliage plants, including Ferns and Palms. One Calocasia, or Yam, is normally variegated with green and white colour, the markings being irregular; but recently one leaf of this plant appeared with one half perfectly green, and the other half pure white, separated by the mid-rib. The last leaf to develop, now about 2 feet in length, is of pure white colour, and almost transparent, without any green at all on leaf or petiole.

The gorgeous Flamboyant, or Flame Tree, is now in full bloom everywhere; the masses of scarlet blossom all over the tree make an imposing display, and the tree is common about Colombo.

Palms are to be seen in every direction, especially Cocos nucifera, the Coconut-Palm, and the Areca-Palm (A. Catechu)—the former never growing straight, the latter never crooked. A Sago-Palm in the garden suffered some months back from a blight, and all the circle of leaves died off; a new set of leaves came up from the crown, appearing like gigantic young Fern-fronds, but before they were a foot in length they were also blighted; a second time the tree put forth a set of leaves, and a second time they all turned brown and looked scorched; once more a new set appeared, and these I had carefully protected from the scorching sun, and they were sprinkled with water night and morning, but with no more success than before. I thought the Palm would now certainly die, but Nature in the tropics is very bountiful, and plants are tenacious of life, therefore a fourth time the circlet of young curling fronds appeared. This time the rainy season was upon us, and the young leaves were quickly forced into growth, and now crown the Palm with a fine head of long graceful fronds. The trunk of this Sago-Palm about 4 feet from the ground is nearly the same measurement in diameter, as it is thickly grown

over with Elk's-horn Fern (Platynerium alci-corne). This Fern, with its curious sheath, also grows well on Coconut-Palms, covering their long bare stems with its graceful green fronds. Another Fern which spreads with amazing rapidity is the Nephrolepis; on one lawn it is planted in clumps around the base of Coconut-Palms, and careful watching is necessary to prevent the long creeping roots from wandering all over the lawn. A pretty dark-green Fern springs up in shady places along the rockery, and grows very freely; in appearance it is like Pteris tremula, but has darker foliage. Lygodium scandens is very common, and in parts of the island I have seen it thickly trailing over the hedge-rows along Cinnamon plantations; Selaginellas also do well, one variety with a bronze-like sheen on the upper surface is particularly handsome.

A fine tree of Ixora, some 25 feet high, has just come into bloom again, and is covered with corymbs of fine pink, coral-like blossoms. In India the flowers are offered in the temples to, I believe, the Hindoo deity Iswarra, from which the name of the plant is probably derived. I had no idea when I took up my pen of letting it run on to this extent, and I must draw to a conclusion.

Jadoo-fibre was greatly boomed here some four years ago or more, when it was first introduced; now one hears little of it. I find that some plants do remarkably well in nothing but cocoanut-fibre. I filled some hollowed-out cocoanut-shells with this substance, and then put Adiantums in. They are flourishing, and make excellent hanging pots. A portion of rockery along each side of a pathway was also filled with cocoanut-fibre, in which numbers of self-sown plants came up after some time and flourished so that I put in other plants, which grow with great luxuriance. Among other plants growing in it are Caladiums (in variety), Colocasia, Balsam, Zinnia, Ferns of sorts, Codiaeums, and several close-growing foliage plants of great beauty, the names of which I am unacquainted with. *Ivor Etherington, Colombo, Ceylon, July 20, 1904.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Odontoglossums.—The weather during the past four or five months has been very favourable for the occupants of the cool Orchid-house, and the plants do not in any way show signs of injury by the great heat experienced during July and August. Where a representative collection of these *Odontoglossums* is grown, there will be some plants that require attention as to repotting or top-dressing at different seasons of the year, but the present month is the best time for repotting most of the plants, as the atmosphere out-of-doors is generally of so genial a nature that with but little trouble a very suitable atmosphere can be maintained in the house, which is of the greatest assistance towards the quick re-establishment of the plants. The majority of the plants are now pushing up young growths, which will soon make roots from their base, and if they are afforded new compost they will obtain a firm hold of it before the commencement of winter. It invariably happens, however, in all large collections that there are many plants, through having made very late growth or other causes, that do not admit of being disturbed at this period. Those plants that are in a dormant condition should not be repotted until there are new growths several inches in length.

The Process of Potting.—A suitable compost for these cool-house *Odontoglossums* is one consisting of one-fourth good fibrous peat, one-fourth leaf-soil, and one-half chopped sphagnum-moss, mixing with it a moderate quantity of broken crocks and coarse sand. Too much trouble cannot be taken in preparing the moss; all the rubbish must be carefully picked out, and every particle examined for small slugs. This

work requires a long time, but it is better than having to hunt every night among the plants for slugs, which are seldom caught before some special flower-spike, or roots have been injured. Use clean pots, and for drainage employ a layer of dried Fern-rhizome to about 3 inches in depth for the large pots, while the smaller pots should be just covered around the bottom. Make the compost moderately firm, and keep the base of each plant just below the rim of the pot. Fill up the pot to within 1½ inch of the rim with the compost, and upon the surface put a mixture of peat and freshly-gathered sphagnum-moss in equal proportions.

Old or Weakly Plants.—Any old plants of *Odontoglossum crispum* and its numerous varieties, also *O. triumphans*, *O. Hallii*, *O. luteo-purpureum*, *O. hystrix*, *O. Pescatorei*, *O. gloriosum*, *O. polyxanthum*, *O. Harryanum*, *O. cirrhosum*, *O. cuspidatum*, and the various hybrids of *O. excellens*, *O. Andersonianum*, *O. Ruckerianum*, &c., which have by any means deteriorated, should be carefully turned out of their pots, and, after having been trimmed of dead roots, decayed and useless back bulbs, &c., should be repotted in pots just large enough to hold their roots. Such weakly plants should be kept by themselves, and more shade and less water at the roots is required than for those that are in a healthy condition. After the plants have been repotted, afford them a good watering, and for a few weeks afterwards apply only enough water to induce the Sphagnum-moss to grow. Syringe well between the pots morning and evening, and admit as much air to the houses as is possible, especially when the temperature outside is above 50°. Afford shade from strong sunshine at all times.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Peach and Nectarine-trees.—Early trees from which the fruit has been gathered should be examined, and if the growths are crowded remove the shoots which have borne fruits this season, and some of the weak ones made only during the present season that are not sufficiently strong to produce large fruits next year. If the trees have been well attended to throughout the growing season, first by disbudding, afterwards by periodically reducing the amount of new growth, very few shoots will need to be cut out now. Syringe the trees sufficiently to cleanse the foliage of red-spider, or any other pest that may have attacked it. Should the trees require more water at the roots, take care that when this water is afforded sufficient is applied to reach every root. Walls which are provided with glass coping to protect the trees when in bloom, &c., partly screen the borders from the rain, and such borders should be thoroughly examined occasionally to ascertain the exact state of the soil.

Apple trees bearing exceptional crops of fruit may need some support, if this has not been afforded already. Tie the laden branches to stout poles, which will prevent the branches from breaking, and from being blown about during high winds. Young trees, more especially such varieties as Lane's Prince Albert, Cellini Pippin, and other heavy croppers are very liable to have their branches broken if such support is withheld from them. It is somewhat late to do this work in respect to the earlier varieties, but the fruits of later varieties should not be gathered for some time to come.

Strawberry Plants.—Since the recent "rains" these plants have grown quickly, and are now producing strong leaves and crowns. Examine them once more, removing the "runners" which have been made since the beds were cleared up after the fruits were gathered. Keep the beds free from weeds, and use the hoe between the rows of young plants, or of others planted recently. Waterloo is a variety that is much esteemed by some gardeners, and we grow it largely. I usually put these plants out at distances of 1 foot apart in the rows, as the foliage of this variety is not strong or of great length. There need be no fear that the foliage will become crowded during the first season after planting.

Figs.—These will need protection as the fruits approach ripeness. Nets may be employed in

some instances, and will protect the fruits from destruction by blackbirds. On large bushes, such as are grown in the chalky districts of the southern counties, I have used small muslin bags with success. These preserve the fruits from injury from wasps, flies, and birds.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peaches and Nectarines.—The present season has been favourable for crops in late houses, and the abundance of sunshine having allowed free ventilation, the conditions have been such as to produce richly-flavoured, juicy fruits. Such varieties as *Crimson Galande* and *Dymond* Peaches, and *Albert Victor* Nectarines are now ripening. The trees should still be given the benefit of free ventilation unless it is desirable to ripen the fruits more quickly, in which case the ventilators may be closed a little earlier in the afternoon to conserve some of the sun-heat; this will also assist in ripening the wood. When the fruit is ripening it is desirable that the roots should be maintained in a somewhat drier condition, but they must not be permitted to become so dry as to affect the foliage adversely. When it is not advisable to use the syringe, maintain sufficient moisture in the atmosphere by frequently damping the floors, &c. During dull, wet weather secure a free circulation of warm air by keeping a little heat in the water-pipes. To obtain the best results in unheated houses of such varieties as *Sea Eagle*, *Princess of Wales*, *Walburton Admirable*, &c., close the houses early in order to make the most of the sun-heat; but on the approach of night apply top ventilation and obtain a somewhat drier atmosphere to aid the fruits in ripening.

Pines.—Heat and moisture are essential to plants carrying fruits that are swelling, in order to secure their full development. Maintain a temperature by day of from 80° to 90°, closing the house with a temperature of 85°, with sun-heat; at night the temperature should not be allowed to fall below 70°. With the sun-heat gradually becoming less, shading and overhead syringing should be discontinued to young plants. Sufficient but careful ventilation must be given to prevent the growths from becoming too soft, and the necessary moisture at the roots should be applied in the form of weak liquid manure, but it must be given only when really necessary. Careful attention to details at this season is important, in order that the plants may become in such a condition that they will pass through the winter successfully. Suckers that have only recently made roots should be kept near to the glass, to secure broad and robust leaves, affording them a temperature at night of 65°. Ventilate the house or pit freely, and afford water to the young plants with great care.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. PIRTH, Esq., Ashwieke Hall, Marshfield, Chippenham.

Cabbages.—From seeds sown in the first week in August, we have now good, sturdy little plants ready for planting in their permanent quarters. This work should be done carefully so that the plants, experiencing but little check, may become well established before there is any severe weather. Ground from which Onions have been cleared will be suitable for these Cabbage plants. Clear away all refuse from the surface and then afford a liberal dressing of lime, sufficient thoroughly to whiten the surface, that it may kill every slug within reach. A heavy application of manure should then be given, and let it be mixed with the soil as much as possible during the process of digging. On light land the work will be no trouble, but upon clay soil that has been lying flat, and has been trodden over during the six months it has been under a crop, the conditions are very different. Such ground requires a dressing of ashes from the stoke-hole in addition to the manure. The ashes should be shifted so as to exclude all clinkers, and may then be dug into the ground along with the manure. If another dressing of lime and ashes be applied when the digging has been finished, and this be raked into the surface soil previous to

planting, the soil will be rendered more workable and will fill up the crevices better, and the slugs will thus be prevented from doing much damage whilst the plants are establishing themselves. Plant as soon as possible in lines about 18 inches apart each way, choosing for this work a fine day when the soil is in good condition. Keep a sharp look-out afterwards for slugs.

Spinach-Beet.—The seed of this is now ripening, and should be gathered, bunched up, and suspended in a shed to dry; or it may be spread on a sheet and exposed to the sun, which will prevent much seed from being lost, as it falls about if roughly handled. If the plants from late sowings have come too thickly, they may be thinned, and the thinnings transplanted, if the stock is not already sufficient to supply the demand. Spinach-Beet is most useful here during winter and spring; the plants give no trouble, and they furnish a dish when required. The midrib should never be pulled to send to the kitchen.

Broad Beans.—If these were allowed to ripen seeds, they should now be gathered, and exposed to become dry. Let the ground be cleared of all rubbish, and then apply a good dressing of lime. If the ground is not required for immediate cropping, apply another dressing of lime in the course of a few days when the ground is dry. Apply the hoe over the surface afterwards, and rake it so as to mix all with the surface soil, and kill what is possible previous to digging the ground. Treat all ground as it becomes vacant in a similar way, as it is at such time that strong measures for the exterminating of insect pests are possible without causing injury to growing crops. I recommend lime for the purpose because it is cheap and easy to obtain. Soot is equally good if used in sufficient quantity, and its manurial qualities will have a good effect upon the crop that follows.

Kohl-Rabi.—Plants from late sowings are growing strongly, and require an extra amount of thinning. Take out all weakly plants so as to allow the others room to swell.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymsms Park, Hatfield, Hertfordshire.

Bouvardias that have been planted-out in the open ground should now be lifted and potted up, taking care to secure as good a "ball" of roots to each plant as possible. The potting-soil may consist of three parts loam, one part flaky leaf-soil, and a little well-rotted manure, adding a moderate quantity of silver-sand. Place the plants in a cool pit after they have been potted, and keep the atmosphere somewhat close for a time. Afford the plants shade from the sun's rays until they become established, but not afterwards. Later in the autumn it will be necessary to afford the plants artificial heat, at which time a position near to the glass in a house having a temperature of from 50° to 55° will be found to suit them well. Plants also which are in pots, but are at present in the open-air, should be placed under cover.

Richardia africana.—If these have been planted in trenches during the summer, preparations should at once be made for putting the plants into pots. It is usual to take a sharp spade and cut round each plant at a distance of about 6 inches from the stem a few days before the plants are lifted. This reduces the roots to a reasonable quantity, and to a certain degree prevents the plants from suffering greatly from the check entailed by the process of lifting and potting. It will not be possible to place the plants in such small pots as those recommended in a previous Calendar for plants which have been dried off, and pots corresponding to the quantity of roots must be used. After they have been potted, let the plants be stood in a cool and moist pit, affording them shade from the sun and keeping the atmosphere close for a few days, as the plants may flag somewhat at first if the weather be bright. In order to check this, let the syringe be used freely among the plants several times a day.

Mignonette.—A sowing may be made at the present time to provide plants for flowering during late winter and early spring. Use clean

and well-drained 3-inch pots, and fill these to within an inch of the rim with a compost consisting of three parts loam and one part leaf-soil. After making the surface of the soil level, sow the seeds thinly, and cover them slightly with finely-sifted soil. Let the pots be stood in a shallow, cold frame, and afford them a watering through a fine rose-can. Afford water very carefully while the seedlings are small, as otherwise they will be liable to turn yellow and damp off. When the seedlings are growing freely thin them out to three or four plants of about equal size in each pot. When the plants have made sufficient roots, let them be placed in 5-inch or 6-inch pots, adding a little well-rotted manure to the soil on this occasion. At the end of the autumn the plants should be placed on a shelf in the greenhouse, or close to the roof-glass in any house where an atmospheric temperature of from 35° to 45° is maintained.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Roses.—No time should be lost in preparing new beds in cases where they are intended to be made. The ground should be trenched to a depth of 2 feet 6 inches or 3 feet, and if the soil is a stiff loam little in the shape of manure will be required to be added to it. If the ground is exceptionally clayey, some plaster, lime-rubble, old potting, or Mushroom-soil may be incorporated with it, but soil for Rose-growing should always be of a heavy nature. Any good garden soil will grow Roses, provided it is not too light in character and is free from fungus. If the subsoil consists of blue clay the beds will require draining, to allow the water in the winter to drain away. Where drainage is necessary, the beds must be trenched deeper than recommended above, placing about 5 or 6 inches of clinkers or broken brickbats in the bottom, and a 3-inch drain-pipe connected with a main drain, or carried into a shrubbery where the water may be allowed to soak away. By doing this work now, the beds by planting-time will have sunk to their proper level, which should be about 9 inches or a foot above the surrounding ground. Where existing beds are not doing well, perhaps owing to bad soil, a good heap of rough loam, or the top spit of a pasture that has been fed with cattle, should be thrown up and turned over a few times; it will then be ready when the lifting season comes.

Climbing Roses should be given their final thinning by cutting out all useless wood, at the same time laying-in the young shoots to get well ripened before the cold weather arrives. *Crimson Rambler* may have still more of its old shoots removed, but too much should not be taken out in cases where it is grown over iron trellises, as the old wood gives shelter to the young shoots, and protects them somewhat from canker, which is influenced by the iron.

Lilium candidum.—These should now be planted, selecting good, sound, medium-sized bulbs for the purpose, and placing them not more than 2 inches beneath the soil. The flowers are effective among *Rhododendrons*, where the soil, being of a peaty nature, suits the plants, which are further benefitted by the shelter afforded by the *Rhododendrons*.

Bulbs.—The orders for bulbs for outside planting must now be given, if such has not already been done. Beds that have contained plants for summer flowering which have past, may be cleared and made ready for bulb-planting. Little will be required in the way of manure for the beds, with the exception of a little bone-meal, which is a good substitute for rotten manure at this season, and a sprinkling of soot may be added to keep away slugs.

Pansies and Violas.—As cuttings of these will now be well rooted, the lights should be removed every day. The plants should be stopped to induce them to produce side-shoots and thus make better plants. Old plants intended to be kept must be taken up, divided, the roots shortened, and then planted in some good soil. One of the best *Violas* to succeed in dry weather is *Bridegroom*. It has been in flower with us since last April and is now in full bloom.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, SEPT. 17—German Gardeners' Club meet.
 MONDAY, SEPT. 19 { Nat. Chrysanthemum Society's
 Floral Com. at Essex Hall.
 TUESDAY, SEPT. 20 { Roy. Hort. Soc. Comms. meet.,
 also Nat. Rose Soc. Show, and
 and Nat. Dahlia Soc. commit-
 tee meeting in the Royal Horti-
 cultural Hall.
 FRIDAY, SEPT. 23—Roy. Bot. Soc. Gen. meet.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
 Dutch Bulbs, at 67 and 68, Cheapside, E.C., by
 Protheroe & Morris, at 10.30.
 TUESDAY, SEPTEMBER 20—
 Specimens and other Palms, Plants, &c., at 31. Ful-
 ham Palace Road, Hammersmith, by Protheroe &
 Morris, at 12.
 THURSDAY and FRIDAY, SEPTEMBER 22, 23—
 Unreserved Clearance Sale of Palms, Foliage and
 Greenhouse Plants, Glass Erections, and Outdoor
 Shrubs, at Victoria and Paradise Nurseries, Upper
 Holloway, by order of Messrs. B. S. Williams & Son,
 by Protheroe & Morris, at 12.
 FRIDAY, SEPTEMBER 23—
 Imported and Established Orchids, at 67 and 68,
 Cheapside, E.C., by Protheroe & Morris, at 12.30.
 (For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced
 from observations of Forty-three Years at Chiswick
 —56°7'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 11 (6 P.M.): Max. 63°;
 Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street,
 Covent Garden, London.—Thursday, Sept. 15
 (10 A.M.): Bar., 30; Temp., 60°. Weather—
 Bright sunshine.

PROVINCES.—Wednesday, Sept. 11 (6 P.M.): Max. 60°;
 East Coast of England; Min. 54°, East Coast
 of Scotland.

What are
Species?

THE answer to this question is becoming more and more uncertain and arbitrary. A Cox's Orange Pippin Apple may rightly be referred to *Pyrus Malus*, so may also be Peasgood's Nonsuch, but no one would dispute their distinction one from the other. In this case the difference is palpable. There are cases, however, where, although no superficial differences can be seen, yet the course of life, and the manners and customs, so to speak, may vary very greatly. Very often too this variation is of great practical importance to the cultivator. One form, for instance, may be susceptible to disease, or injury from fungus or insect; another form externally identical is proved to be immune from such attacks, or at least does not suffer from them.

Mr. E. S. SALMON, in a paper in the *Annales Mycologici*, Vol. II, 1904, has related the results of his experiments made with the species of *Bromus* in the Cambridge Botanic Garden and elsewhere. He tells us that each species of *Bromus* possesses distinctive physiological or constitutional characters existing concomitantly with the specific morphological characters. These physiological characters are constant, and render the species susceptible or immune in a definite manner. Thus, in *Bromus mollis* there are two distinct races, one immune to fungus attack (*Oidium*), the other susceptible to it. The fact has not only been observed, but it has been proved experimentally.

This fact is of importance in connection with the possibility of the artificial breeding

of immune races of plants of economic value. The development of a disease-proof Potato, Tomato, or Cucumber, is therefore not an idle dream, but quite within the limits of possibility. "Since we find in Nature," says the author, "within the range of a morphological species, the existence of races possessing different constitutional powers as regards resistance to the attacks of certain fungi, we have reason to hope that artificial selection, constantly exercised, might lead to the breeding of a race with a constitution conferring total immunity against the most destructive fungus parasites."

In this connection we have often alluded to the hybrid Wheats raised by Messrs. CARTER & Co. On inspecting them superficially, we found that in some cases the differences were so slight that little or no advantage seemed to have been gained. We were told, however, that in Australia, whither some of these Wheats were sent, great differences were found to exist in the capacity for resisting fungus attacks. Dominance or latency, prepotency or equivalence are thus not only questions of purely scientific interest, but they have so important a practical bearing that cultivators should do their best to encourage and support the investigators in their usually disinterested labours, in the full certainty that with increase of knowledge will come practical benefit.

ÆSCULUS (PAVIA) INDICA.—Our Supplementary Illustration shows a fine specimen of this tree growing in the gardens of Barton Hall, Bury St. Edmunds. It was raised from seed brought from India in 1857 by the late Sir HENRY BUNBURY. It flowers, according to Mr. L. E. WALKER, the present gardener at Barton Hall, about one month later than the ordinary Horse-Chestnut, and the pink blossoms are very attractive. In the Western Himalaya the species forms a fine tree 60 to 70 feet in height. The foliage is more delicate than that of the common Horse-Chestnut. The seeds are eaten in time of famine, and habitually by cattle. The tree is fully described by Mr. HIERN in HOOKER'S *Flora of British India*, vol. i, 675, and was figured in the *Botanical Magazine*, t. 5117.

SALE OF POTATOS.—At an auction sale at the nursery of Messrs. W. W. JOHNSON & SON, Boston, Lincolnshire, on the 7th inst., some extraordinary prices were paid for a new early Potato named The Pearl. At the commencement of the sale a plant of this Potato was dug up, and the tubers unearthed were found to be thirty in number. Mr. DEAL, manager, said that they would weigh about 2 lb. The produce of this root was then sold, the price paid being £13 10s., and the purchaser being Mr. J. WING, Boston. The remainder of the crop was sold without having been dug. There were sixty-four "lots," and the highest price paid was £13 10s., and the lowest £8.

NICOTIANA SANDERÆ.—Those who have had the good fortune to see the houses full of this beautiful annual in the nurseries of Mr. SANDER at Bruges must have felt that it would be difficult to exaggerate the beauty of this new introduction. For ourselves we saw the plants on Monday last, when their full beauty was passed, but enough remained to show how extremely beautiful the plant is. Grown in beds under glass, they form bushes of 3 to 4 feet high and as much through, profusely covered with rose-tinted flowers of many degrees of intensity. Sir TREVOR LAWRENCE, we believe, has grown the plant as an annual out-of-doors, and many of our readers

must have seen the plants as exhibited by Messrs. SANDER, but the exhibits convey only a very feeble impression of the extreme beauty of the plant when seen in the enormous quantities grown at Bruges.

A REMARKABLE FLOWER OF STAPELIA REVOLUTA.—We have received an abnormal flower of this species from our old correspondent, Mr. JUSTUS CORDEROY. The following interesting remarks upon the flower are by Mr. N. E. BROWN, Herbarium, Royal Gardens, Kew:—"The flower of *Stapelia revoluta* is totally unlike any abnormality known to me in the group *Stapelieæ*, and consists, in brief, of one flower superposed upon another. The pedicel and calyx are quite normal, even the minute organs (glands?) which alternate with the calyx-lobes between the calyx and the corolla are as usual. Next in order is a corolla, which in texture, ciliation, and colour is quite normal; but all the lobes are free to the base, not connate below the middle into a disc, and two of them are abnormally small, reflexed, and somewhat distorted; the other three are normal, except that the basal part (which in the normal flower forms the raised, cushion-like disc), is not so much raised or thickened as usual. This corolla is not accompanied by any organs or even rudiments representing the coronal lobes or stamens, but closely sessile within it; and concentrically placed is another corolla without any trace of a separate calyx to it. This interior corolla is quite normal in all respects, its lobes alternate with those of the outer corolla, and are ciliate with vibrant purple, clavate hairs; the colour is entirely purple-brown, except in the depression enclosing the corona and staminal column, which is whitish in the lower part. The coronal lobes and staminal column are properly developed, and in all details are just as in normal flowers. In fact, the flower consists of a perfectly normal flower with a somewhat abnormal corolla inserted between the normal corolla and the calyx."

A LECTURE ON POTATOS was given by Mr. W. P. WRIGHT in Edinburgh on the 14th inst.; Mr. McHATTIE occupied the chair. The company consisted largely of growers for market Potato dealers, and gardeners. Among those present were Messrs. Scarlett, MacFarlane, Sinclair, Barues (Eaton Hall Gardens), D. W. Thomson, and D. P. Laird.

PINEAPPLE - GROWING IN INDIA.—Mr. J. NORMAN ROSS, the son of our veteran correspondent and Apple-raiser, recently read, before the Luskerpore Valley Society of Planters, a paper on "Vegetables all the Year Round and How to Grow Them." He advocated the more universal cultivation by private gardeners and others of many of the better-known English vegetables, as well as that of plants for food that are already acclimatised in India. Pineapple growing he strongly recommended, saying that—

"A space in the vegetable garden should always be reserved for Pines, the best fruit we have here, for by being planted in the vegetable garden they are more easily protected from jackals. A jackal will break its way through barbed wire fences interlaced with Bamboos to obtain Pineapples, and will often eat or destroy ten or twelve in a single night. To get good large fruits, the largest suckers should be selected and planted 4 feet by 3 in a well-manured and deeply-trenched piece of ground. They should be planted very firmly, and do not need any cultivation afterwards, except a very light hoeing to keep down the jungle, or even weeding is sufficient. When the plants become of a fair size they throw out a number of suckers or side shoots, and these should be taken off as soon as they appear, leaving about two only on each plant for the next year's planting. Planting from suckers should be done in June. Break off the suckers carefully from the old plant, and strip off the small bottom leaves until no more small roots are visible, and then plant as stated before; at least 75 per cent. will fruit the following year. By leaving the old plants year after year the suckers fruit from them, but the fruits are never so large or so good as when grown on their own roots."

ROYAL HORTICULTURAL SOCIETY.—The first Show of Autumn Roses held by the Royal Horticultural Society in conjunction with the National Rose Society will take place on Tuesday next the 20th instant, in the Royal Horticultural Hall, Vincent Square, Westminster. The judging will commence at 11.30 a.m., and the show will be open to the members of the two Societies at 12.30, the public being admitted from 2 to 5 p.m. The Royal Horticultural Society's Fruit, Floral, and Orchid Committees will meet as usual. The National Dahlia Society's Committee will meet at 11.30 for the purpose of awarding Certificates to new Seedling Dahlias. A lecture, illustrated by lantern slides, will be delivered, at 3 p.m., by Mr. GEORGE GORDON, V.M.H., on "Ways of Employing Roses in Garden Decoration."

APPLES SELL CHEAPLY.—Our correspondent at Coventry writes that the retail price of Apples in Coventry market on September 2 was 1½d. per pound.

FLOWERS IN SEASON.—Mr. AMOS PERRY has sent us a form of *Sedum spectabile* named *S. s. atro-purpureum*. The flowers are rather deeper in colour than these of the type. Also *Galega officinalis plena*, a semi-double variety of this well-known border plant.

MOROCCO.—Mr. A. S. FORREST and Mr. S. L. BENSUSAN have collaborated in a book on "Morocco," to be published immediately by Messrs. ADAM & CHARLES BLACK in their series of "Colour Books." It is the record of a journey to the foot hills of the Atlas Mountains, and offers a picture of life in parts of the country to which few Europeans have access.

THE LATE DEAN HOLE.—The following letter was sent to the *Daily Express* by Messrs. ALEX. DICKSON & SONS, Newtownards, whose new Rose named "Dean Hole" gained a Gold Medal at the Temple Show. A specimen bloom was given to Mrs. HOLE to take to the DEAN, and his letter of thanks is probably the last occasion on which he wrote about his favourite flower.

"If you could have seen me when Mrs. HOLE came back from the Show, with a most lovely Rose in her hand, which she told me had won a Gold Medal, and was named "Dean Hole"—if you could have seen me gazing upon it, proud and happy as a boy with his first watch or his new pony, you would know better than words can tell how delighted I am with the honour you have conferred upon me. I have been an enthusiastic lover of the Rose for sixty years; but never since I established the first exhibition (Roses only) in London, 1858, has my devotion been more joyful than when I looked upon this exquisite flower. I thank you most heartily."

AFFORESTATION IN WALES.—A Welsh national conference of delegates appointed by the Welsh county councils to discuss the question of afforestation in the Principality, says the *Times*, was held at Swansea on the 7th inst., Sir Charles Philipps, of Picton Castle, presiding. The Chairman, in referring to the great importance of the study of forestry, said that the object of that meeting was to consider how best to advise the county councils. After references to the report of the departmental committee of 1902, the speaker said that there was in Wales an enormous area which could be profitably afforested, and pointed to the fact that afforestation gave employment to ten men where sheep-farming would only give employment to one. It was necessary that professors of the subject should be appointed at the Universities, and that practical demonstration areas should be set apart. One of the latter had been already established on high meadow land in the Forest of Dean. The view was expressed in course of discussion that the establishment of a central school of forestry for

Wales was of the utmost importance, and that such a school would become self-supporting after a few years. It was at length resolved that the members should urge on their respective councils the great importance of the study and practical application of forestry, by providing lectures to be given at suitable centres and bursaries, enabling students to attend these lectures; also that a central school of forestry be established with example plants of three or more acres, and demonstration areas of suitable extent, and that the necessary expense be defrayed by the county councils on the basis of their respective rateable values, the whole amount now asked for not to exceed £5,000. It was further resolved to communicate what was being done to the Government department, in the hope that a grant from the State would be made towards their efforts.

STOCK-TAKING: AUGUST.—The Board of Trade Returns for the month of August prove to be not quite so unsatisfactory as many expected; there is a loss of £321,153 on the import side, and a gain of £694,996 on that of exports. The total value of the month's imports was £42,439,943 against £42,761,456 for August of last year—the drop being as stated above. Our "summary" gives the three great divisions as follows:

IMPORTS.	1903.	1904.	Difference.
	£	£	£
Articles of food and drink—duty free	9,398,280	9,216,514	-181,766
Articles of food & drink—dutiable	9,980,051	9,414,595	-565,456
All other Imports...	23,383,125	23,808,831	+425,706

Fresh flowers were imported to the value of £1,526 against £1,568 for August, 1903—a decrease of £42. The value of the wood and timber entered during the month was £3,383,087 against, for the same period last year, £3,661,519—or a drop of £278,432. It may be interesting to note here that what may be called the State Council of Finland has decided to clear out of Lapland from eight to ten millions of trees, possibly to give assistance in the better growth of the Lap forests. Our table of fruit, root, and vegetable imports is as follows:—

IMPORTS.	1903.	1904.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw—			
Apples	148,271	118,215	-30,056
Apricots and Peaches	1,630	1,054	-576
Bananas—bunches ...	357,393	471,955	+114,562
Cherries	3,611	6,506	+2,895
Currants	13,598	7,096	-6,502
Gooseberries	383	242	-141
Grapes	117,432	150,911	+33,479
Lemons... ..	68,752	80,825	+12,073
Nuts—Almonds	3,672	4,043	+371
Others used as fruit	29,417	29,686	+269
Oranges... ..	24,890	12,888	-12,002
Pears	78,527	233,342	+154,815
Plums	187,750	278,487	+90,737
Strawberries	18	161	+143
Unenumerated	269,775	263,549	-6,226
Vegetables, raw—			
Onions ... ..bush.	738,537	677,225	-61,312
Potatoes ... ..cwt.	256,811	316,995	+60,184
Tomatoes	126,164	163,110	+36,946
Unenumerated	28,458	25,772	-2,686

The value of the dried fruits entered last month is placed at £16,792, as compared with £10,017 for the same period last year—or an increase of £6,775. The total of the imports for the past

eight months is £355,316,302, compared with £348,819,362—an increase of £6,496,940.

THE EXPORTS

for the month are placed at £26,359,880, against £25,664,884—or a gain of £694,996. A great vegetable product—Cotton—secured the result, the value of that item being £1,549,984, India and China were great customers. The eight months' trade is valued at £195,260,129, against £194,063,054 for the corresponding period in 1903—showing a gain of £1,197,075.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The eighteenth annual dinner of this Society will be held at the Holborn Restaurant (Venetian Chamber), High Holborn, W.C., on Wednesday, October 12, 1904, at 6.30 P.M. W. A. BILNEY, Esq., of Weybridge, has consented to preside on this occasion. The Committee hope that all honorary and benefit members and their friends who can possibly attend will endeavour to do so.

ZYGO-COLAX.—We are informed by Captain HOLFORD that the plant exhibited by him at the last meeting of the Royal Horticultural Society was the variety *Zygo-Colax Wiganianus superbus*, which received a First-class Certificate from the Orchid Committee on February 25, 1902, when shown by Messrs. SANDER & SONS. The variety was illustrated in these pages on March 8, 1902. There is no Westonbirt variety of this hybrid.

PINKS IN AUTUMN.—Flowers have been sent us by Messrs. B. LADHAMS, Ltd., Shirley Nurseries, Southampton, which are just as vigorous and fresh in appearance as Pinks are usually in spring. One of these perpetual-flowering varieties is named *Florence*, and a description of the flowers was published on p. 192 of our last issue. The other variety sent is *Marion*, a purple self flower, having more fragrance than is possessed by *Florence*.

THE "GEOGRAPHICAL JOURNAL" for the month of September contains the second portion of a very interesting paper upon the "Geographical Distribution of Vegetation of the Basins of the Rivers Eden, Tees, Wear and Tyne," by Mr. FRANCIS J. LEWIS, F.L.S. The paper is illustrated by a series of fourteen photographs of the vegetation in those districts.

SCHOOL FOR LADY GARDENERS.—The Hon. F. WOLSELEY has sent us the following particulars of a small school she has at Glynde, near Lewes. The pupils receive practical instruction from the lady-gardener in the following branches of flower-gardening (no vegetables):—The everyday work of a garden, rolling, mowing, sweeping, and tidiness; digging and manuring, seed-sowing, planting and growing herbaceous plants, pruning Roses and fruit-trees, laying-out gardens, arranging flower-borders, &c. Also the management of greenhouse plants, watering and ventilation, forcing bulbs and plants for winter flowering, forcing Violets in cold frames, hot-beds, &c. The pupil can also learn flower market-gardening for profit. The course of work is shortened or prolonged according to the future requirements of the pupils, but should not be less than a year, in order to obtain the experience derived from change of seasons. The terms and other details may be obtained on application to the Hon. F. WOLSELEY, Farm House, Glynde, near Lewes, Sussex.

MESSRS. CHEALS' NURSERIES.—About fifty members of the Crawley and District Gardeners' Society visited the nurseries of Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, on a recent occasion, and were much interested in the display of Dahlias and in the good appearance of the general stock of trees, shrubs, flowering plants, &c.

"AMERICAN FRUITS," the new American illustrated magazine devoted to fruits of all kinds, discusses in the September issue a wide variety of topics pertaining to horticulture. "Successful Commercial Orchardling on a Broad Scale" is treated by E. F. STEPHENS. STANLEY H. WATSON describes the wonderful progress made in "Peach-growing in Texas." An article on "Dwarf Apple-trees, the Latest Proposition for Orchardists," is of special interest. The Apple Situation, the Export Trade, Canadian and Nova Scotia Fruit Prospects, the Cranberry Crop, and the Proceedings of the International Apple Shippers' Association, the Southern Nurserymen's Association, and the Georgia Horticultural Society, are presented in an instructive manner.

MONSTROUS FOXGLOVE.—From Mr. SMITH, of Daisy Hill Nursery, Newry, we have received a form of the common Foxglove (*Digitalis purpurea*), in which the flowers show a curious

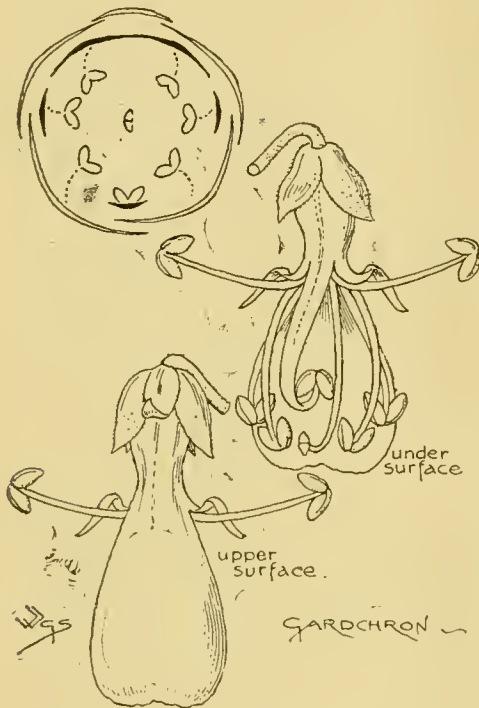


FIG. 80.—ABNORMAL FLOWER OF FOXGLOVE.

deformity (see fig. 80). The tube of the corolla is normal, and so are the two petals constituting the upper lip, but the three lower ones, save only the basal tubular portion, are quite absent. Whilst there is this defect in the corolla, the number of stamens is increased from four to seven, all of them springing from the tube of the corolla. Mr. SMITH informs us that only one plant showed this condition last year, but all the seedlings raised from that plant have flowered, and in each the deformity is reproduced.

THE BRITISH COTTON-GROWING ASSOCIATION AND THE WEST INDIAN COLONIES.—It is reported that the Royal Mail Steam Packet Company have granted free passages to two representatives of the British Cotton-growing Association who are proceeding to the West Indies to inquire into and report on the present method of the cultivation of Cotton, and also to give advice to the planters with regard to the selection of plants and their suitability for different soils.

APPLES FROM AUSTRALIA.—It is stated that during the season 703,000 cases of Australian and Tasmanian Apples were imported here, resulting in a loss to the exporters of £50,000.

A USEFUL APPLIANCE FOR GATHERING FRUITS.

THIS novel appliance, shown in fig. 81, was exhibited by Mr. R. Anker, Addison Road Nursery, Napier Road, Kensington, at the last meeting of the Royal Horticultural Society. Like many other garden implements this one is of Continental origin, and for gathering Apples and Pears in situations where the use of a ladder would be difficult, it should prove very useful. The small weight of the implement is not the least point in its favour, that from which our sketch was made only weighing 1 lb. 6½ oz., although it is 6 feet or more in length. Our figure at the top shows the portion of the tool which grips the fruit when slight pressure has been made with the finger on the trigger shown on the right hand of the illustration. A wire runs through the interior of the handle from the trigger to the "jaw." The bottom jaw is firmly but gently pressed upwards and grips the fruit as seen in the bottom figure. A padding of soft felt inside the tin jaws prevents any danger of bruising the fruits if reasonable care is exercised on the part of the operator. A patent has been applied for.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS.—An esteemed and very liberal Fellow of the Royal Horticultural Society suggested to me, at the recent meeting in the new Hall, the great convenience it would be to visitors were the Council to arrange with some refreshment company to utilize one of the annexes from 3 o'clock till the close of the show, to provide tea and light food. The gentleman in question stated that he should be greatly encouraged to spend an afternoon at the Hall if some such accommodation could be supplied. I know the Council is very conservative in its ideas, and may be for the moment staggered at the suggestion. Whilst suffering from the shock, I may as well go farther and suggest that a little music in the gallery would also be a delightful addition to the afternoon proceedings. There is no music near, and the new Hall is quite remote from any restaurant. D.

FRUIT-GROWING.—Had Mr. Crump been a little less ambiguous in his article on "Fruit-Growing on the Madresfield Court Estate," the probability is that the question of how those almost fabulous amounts of money were to be realised would never have been raised; nor does his second communication, at p. 189, throw much more light upon it. Mr. Crump accuses me of misquoting or perverting his figures. I gave them exactly as he did, viz., 10,000 trees at £5 = £50,000, and that of the Worcester valuer, 10,000 at £10 = £100,000. Neither of those gentlemen gave in their prospective valuation any explanation or formula of how they arrived at the figures. I am pleased to note that Mr. Crump is about to inaugurate a system of fruit-tree culture and distribution on the Madresfield Court Estate, which he hopes will be more successful. W. Miller, Berkswell.

"GRADUS" PEA AND SOME NEW VARIETIES.—No doubt Gradus is a really good second early Pea. I sowed a row of that variety side by side with Sutton's Early Giant, and the only difference I could see was the writing on the labels. As a first early Pea Laxton's William the First has never been beaten; Sutton's Bountiful is a good succeeding variety. A most excellent variety that seems to come between the second early Peas and the wrinkled Marrows is Sutton's Prince of Peas. It is a variety, I think, that will last in favour. A correspondent called attention to a variety called Alderman, which is really a first-class, tall marrow Pea. I first had my attention called to it on a visit to Mr. Gibson at Danesfield. He had it in fine condition, growing with several other varieties. R. M., Newbury, September 6, 1904.

BUDS, ADVENTITIOUS OR OTHERWISE.—I was much interested to see your account in the issue for September 10 of an Apple growing from the trunk of a tree. It reminded me of a similar occurrence I saw two years ago in the garden of Mr. Wm. Knight, Haywards Heath, where a standard Pear-tree, which had been planted about twenty years, produced three fine fruits from the trunk in exactly the same manner as the Apple shown in your illustration. If my memory serves me right, the variety was Marie Louise, and the circumference of the trunk where the Pears protruded was about 40 inches. A. H.

A TRUE YELLOW SNOWDROP.—Among the most interesting Snowdrops in existence are three which have a portion or portions of their inflorescence yellow, instead of green. These are *Galanthus lutescens*, *G. flavescens*, and a double

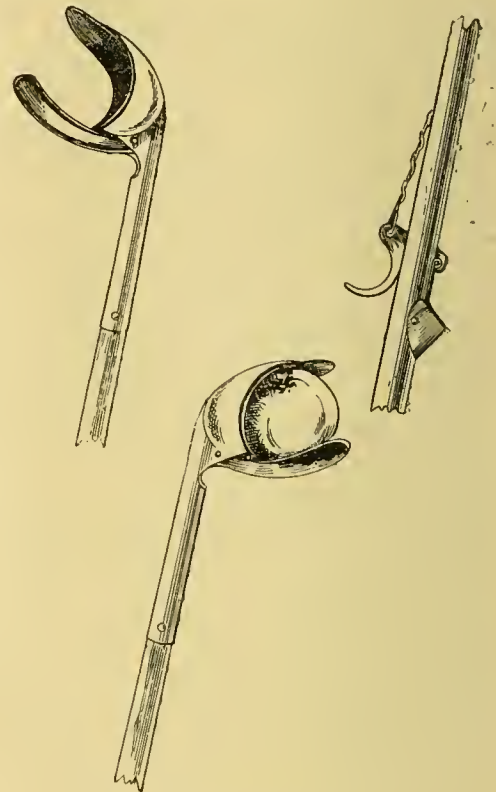


FIG. 81.—A USEFUL APPLIANCE FOR GATHERING FRUITS.

form which appeared in a Cheshire garden, the others being discovered in Northumberland. In these the markings on the segments, which are green normally, have been changed into yellow, and in some cases the scapes and ovaries are yellow also. I have just learned, from a friend who is considered one of our best-informed admirers of the *Galanthus*, that he has been told of a Snowdrop with yellow instead of white segments, which was found in Northumberland this year. There is nothing improbable—rather the contrary—in this information, but, like others who have heard of it, I await the blooming of this Snowdrop another season with keen interest. There is only one bulb in existence, and as *G. nivalis* is the only Snowdrop in the neighbourhood, the yellow one is probably either a sport or a seedling from that species. It is possible that the single bulb may next year produce a flower of the normal colour, but the other "yellow" forms of *G. nivalis* from that district prove constant, although their seedlings do not come yellow, so that one hopes to have the pleasure of seeing this unique flower another year. S. Arnott, Carsethorn-by-Dumfries, N.B.

ARUM ARISARUM.—The "phenomenon" mentioned on August 13 can easily be explained. The bulbs must have come from Italy, most probably from La Mortola, where this plant, as well as *Arum italicum*, are pests in the garden. Certainly in taking the bulbs of *A. arisarum* out of the

soil some young ones of *A. italicum* must have got mixed up with it. The leaves of small plants of this latter might easily be mistaken for those of the other. As long as *Arum arisarum* is flourishing it produces curved spadixes, but when starved it only makes a straight and often a very pale-coloured smaller spadix. This proves that *Arum italicum* overpowered the *A. arisarum*, which finally completely disappeared. *Ecco il miracolo!* *Alvin Berger*.

SCARLET RUNNER BEANS.—I quite agree with your correspondent, "A. M. P., Chesham" (see p. 190), that if gardeners would syringe their Runner Beans in hot and dry weather they would obtain better results. But instead of syringing my rows of plants night and morning, I syringe them late in the afternoon, at about 4 or 5 p.m. I generally find that after the first flowers are set early in the season the remainder give no trouble. Some Beans of "Best of All Runners," grown by me, were exhibited in Lincoln last week; some of these were 14 inches long, though quite young, and most of them were in bunches of four and five together. *H. Green, The Gardens, Nocton Hall, Lincoln.*

THE WHITE VALLOTA.—I note on p. 150 that the wholesale firm who supplied the Vallota-bulbs, one of which produced white flowers, state that they came from the Knysna Forest, Cape Colony. I know the Knysna district fairly well, having many times travelled through the whole of it some years ago. The chief home of Vallota purpurea is in the Zitzikama Forest, many miles to the eastward of Knysna. The forest is situated on the long plateau that runs between the Outeniqua Mountains and the sea, the average breadth of which is about 5 miles. Only a portion is "bush," which contains much splendid timber, the remainder being brushwood from 5 to 12 feet in height, known by the term of "fine bush." It is well watered, several rivers or fast-running streams crossing the plateau from the mountains to the sea. Certain of these rivers run on the top of the plateau for some miles, reaching the sea by a series of falls near the coast. Others run in deep kloofs almost from the foot of the mountains, and it is on the banks of these latter, close above the water-level, that the Vallota is found in the greatest quantity, growing in the sandy debris washed down by the stream. Their general flowering time was February, and I suppose I must have seen thousands of plants altogether in the forest region, but never came across one with white flowers, though I have occasionally seen pale pink forms. The district has no clearly defined wet and dry seasons, heavy rains being liable to occur in any month of the year. Immediately after these, the rivers rise rapidly and become roaring masses of discoloured water, often 12 feet above their usual level, bearing trees and all manner of flotsam down in their turmoil. I was once camped on the bank of one of these rivers when a flood occurred, and was obliged to move my impedimenta hurriedly to a ledge on the kloofside. The Vallotas were then in bloom, and were soon hidden under six feet or more of rushing water; however, when it subsided after thirty hours or so, excepting for a few damaged petals they seemed none the worse for their immersion. The bulbs grew at various depths, some being fully a foot beneath the surface, but these were growing quite as vigorously as those at a less depth. They did not appear to produce bulblets as in pot-culture in this country, and I imagine their method of reproduction in their native habitat is by seed. The variety of *Amaryllis belladonna* known as *blanda* grows freely in the Zitzikama forest. *S. W. Fitzherbert.*

THE INCOME-TAX COMMITTEE.—The Chancellor of the Exchequer is entitled to credit for having appointed a Committee to enquire into certain matters affecting the interests of Income-Tax payers. Two of his predecessors promised a Committee, but it was left to Mr. Austen Chamberlain to give effect to their promise. He appointed a Committee when he was Postmaster-General to inquire into certain matters affecting the interests of servants of the Post Office, and the recommendations of that Committee have not been carried out. A similar result may unfortunately follow the recommendations of the

Income-Tax Committee when its report is issued. Fortunately, however, for those who bear the weight of the Income-Tax, although they cannot themselves remedy all the grievances they so justly complain of, they have it in their power to redress one at least of the more flagrant injustices they suffer, namely, the arbitrary and grossly unfair manner in which some local Commissioners treat them when appealing against excessive assessments. The blue notices of charge are now being delivered, and if the amount is found to be excessive, the best course is to appeal to the Commissioners for special purposes at Somerset House, when a fair hearing and impartial treatment can be relied upon. Many persons fail to obtain relief because they do not furnish accounts in accordance with the requirements of the Inland Revenue authorities. This is a very simple matter if a proper cash

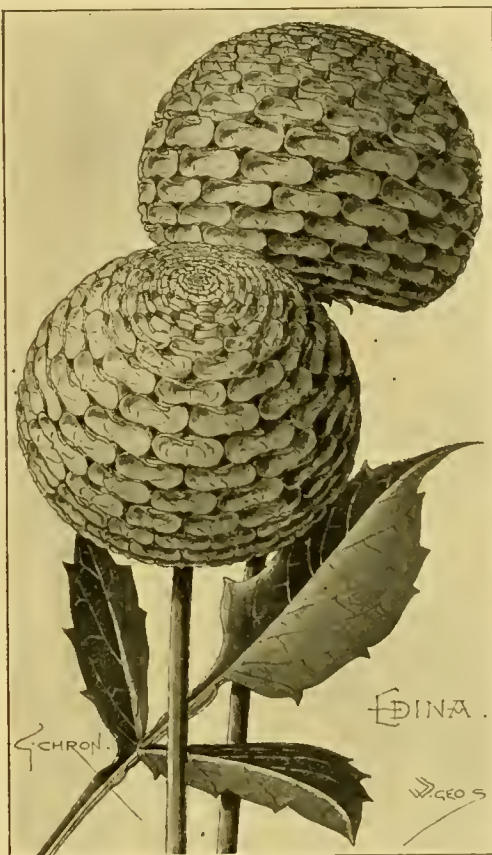


FIG. 82.—POM-PON DAHLIA "EDINA":
COLOUR OF FLOWER YELLOW.

account is kept, which is quite easy if *The Taxpayer's Cash Book* is used. October 5th next is the last day for giving notice to set off a loss in business against income from any other source. There are thousands of persons whose incomes do not exceed £700 per annum who are entitled to make claims for repayment of tax overcharged for the last three years, more particularly those whose incomes are derived from rents, dividends and interest, even when the dividends are said to be paid "free of income-tax." We shall be glad to hear from any of your readers who are in doubt as to their being entitled to claim repayment. Full particulars of the income from all sources must be enclosed, together with a stamped envelope for reply. *The Income-Tax Adjustment Agency, Limited, Poultry, London, E.C., Sept. 1, 1904, W. J. Andrews, Secretary.*

SOLANUM SPECIES.—In the trial-grounds of Messrs. Sutton & Sons, at Reading, can be seen growing, amidst numerous interesting Potato trials, rows of *Solanum tuberosum* and *Solanum Commersoni*. These have precisely the same culture as the Potatoes, and each has made not only free growth, but is blooming profusely. *S. tuberosum* has mauve-coloured flowers and woolly leafage; *S. Commersoni*, which came from France and blooms more freely, has white flowers very

much resembling those of *S. jasminoides*. Growth is spreading; indeed, the species would make an effective summer-bedding plant. Crosses with pollen from named varieties of Potatoes have been effected with these species, fruits being formed, as also with *S. Maglia* and other species. The firm have in their stocks raised from seed sown last spring, many seedlings showing wonderfully robust growth and stout woody stems. With such prospects Potatoes are far from becoming a deteriorated product. *D.*

SENECIO CLIVORUM.—In this new Senecio, introduced by Messrs. Veitch a year or two ago, we have a plant that is effective both in leaf and in flower. The flowers, which are borne in big, loosely-set panicles of twenty or more on each panicle, measure some 5 inches across, and have narrow petals, in colour being a deep tone of orange—just the shade one sees in the "orange"-coloured African Marigold, but, being single, have not the heavy appearance possessed by the Marigold. The flower-spikes are thrown well above the ample foliage to a height of about 4½ feet; this at least is my experience with plants planted twelve months ago in fairly heavy loam on the banks of a pond. The leaves are in form very much like those of the "Winter Heliotrope" (*Petasites fragrans*), but are quite double the size of these, borne on much longer stems, and are very freely produced. Altogether this is a handsome plant, well suited to semi-wild surroundings, where it can have plenty of room and moisture. It is now in full flower, and likely to continue so for some weeks. *J. C. Tallack, August 20.*

FRUITING OF PRUNUS PISSARDII.—In the grounds here this ornamental tree is planted in clumps and single specimens, some of the plants being close upon 20 feet high. This year, like many other plants, they bloomed profusely. Now several of them are carrying fruits, the shade of colour being that of the foliage, perhaps a little lighter in tint. This being the first time they have carried fruit here, I shall be glad to know if this is common elsewhere? *J. Jeffrey, St. Mary's Isle, Kirkcudbright.*

GLASSES FOR CULTIVATING HYACINTHS.—We are forwarding to you a specimen of our No. 33268 new Hyacinth glass with hammered background. These we make in various colours, and as they are inexpensive we hope they will meet the demand for a new pattern. *Stevens & Williams, Brierley Hill, Stourbridge.* [Exceedingly pretty, and very suitable for the purpose. *Ed.*]

THE PLANET, JR., HOE.—I thank your correspondent for his information on p. 174 as to the work performed by the "Planet Jr. Hoe." May I ask him if he has used the "plow" for earthing-up Cabbages and other green crops? Is the seed-drill of any service for Carrots, Beet, Turnips, or Spinach? *J. G. Wilson, Chevet Park Gardens, Wakefield.*

DAHLIA "EDINA."

THE variety of Dahlia illustrated in fig. 82, was shown at the last meeting of the Royal Horticultural Society by Mr. C. Turner, Royal Nurseries, Slough. The flowers were greatly admired on that occasion for their good form and bright yellow colour—qualities that gained for the variety an unanimous Award of Merit from the Floral Committee. The illustration shows the natural size of the flowers.

THE APIARY.

REMOVING SECTION CRATES.—All crates should be removed from the hives and assorted; those that are partly filled with honey can be placed in the hives for feeding purposes, while the dirty, empty crates should be destroyed, and the clean ones wrapped in brown-paper to keep them clean, or placed in a large box until next season. When storing these for winter, a little naphthalene should be sprinkled among them. The section-crate should be thoroughly cleaned before use, and if possible placed in hot soda-water to destroy any wax-grubs. The very best sections only should

be kept. Each stock should have not fewer than eight frames of stores left for wintering purposes, and a hole should be cut in the quilt on which to place cakes of candy as required. A good covering next to the frames is a piece of linen or calico, then some warm quilts, and on the top of these a covering of paper, which can be easily changed should the top of the hive happen to leak. The cover or roof of the hive should be made weather-proof. A piece of calico drawn over the roof tightly and nailed down under the sides, painted with three coats of good paint, makes an excellent water-tight covering. The lifts or raisers should be removed from beneath the hives, particularly so from those hives which are standing in exposed places, and the hives themselves made secure. A simple and inexpensive plan of securing the hive is to drive a small stake into the ground on either side of the hive, draw a rope over the hive, and attach each end to the stake. It will be better to postpone the removal of the hives nearer each other until the colder weather arrives, as the removal now would certainly mean a loss of bees, and a general disturbance to the apiary. Robbing among the bees should be at once checked. When purchasing driven bees, if possible always obtain a guarantee that the colony is free from foul brood. *Expert.*

BRITISH ASSOCIATION.

AGRICULTURE.

Dr. Somerville's Introductory Paper.

(Concluded from p. 174.)

NITRAGIN.

A FEW years ago much interest was excited in this and other countries by the announcement that the scientific discoveries of Hellriegel and Wilfarth had received commercial application, and that the organisms of the nodules of the roots of Leguminosae could be purchased in a form convenient for artificial inoculation. The specific cultures placed upon the market were largely tested practically and experimentally, but the results were such as to convince even the patentees, Nobbe and Hiltner, that the problem which promised so much for agriculture had not been satisfactorily solved. Since that time, however, investigators had not been idle, and the present position of the subject was to be found in a recent report by Hiltner and Störmer. The nitragin put on the market a few years ago was used in two ways, being either applied directly to the fields, or mixed with water and brought into contact with the seed before sowing. Under the former method of procedure an increase of crop was obtained only when the nitragin was used on land containing much humus. The explanation given for failure under other conditions was that the bacteria artificially introduced perished for want of food before the leguminous seed germinated and produced plants. Failure of the nitragin to effect an improvement in the crop when it was sprinkled on the seed was now believed to be due to the action of secretions produced by the seed in the early stages of germination. This difficulty was found to be got over by moistening the seed and allowing it to sprout before the nitragin was applied; but manifestly such a procedure would always be difficult, and often impossible, to carry out in practice. The object, however, would appear to have been gained in another way—namely, by cultivating the bacteria in a medium that imparted to them the necessary power of resistance. Such nourishment might take various forms, but that which gave the best results consisted of a mixture of skim-milk, grape sugar, and peptone, and it was in this medium that the organisms of the nitragin now distributed were cultivated.

IMPROVEMENT OF VARIETIES OF CROPS.

Speaking generally, the attention of agricultural investigators during the past fifty years had been directed more to manurial and similar problems than to the improvement of the yield of crops through the agency of superior varieties. This, it seemed to him, was the outcome of the tradition that agricultural science was based upon chemistry, using the term in its old-fashioned and restricted sense, and as a consequence farmers had looked principally to the chemical laboratory for light and leading. It was true that much excellent work had been accomplished from the botanical side, but this had been performed rather by farmers, seedsmen, or amateurs, than by trained botanists. But fortunately the botanist was now getting his opportunity, and the possibilities before him were sufficiently attractive. Judging by the results that had been obtained, it would appear that wide divergencies as regards yield, nutritive qualities, resistance to disease, and other important properties existed between varieties of the same plant-species; so much so that attention to the relationship between variety and locality would appear to be one of the most important matters to which a farmer could

give consideration. But it had been found that new varieties were frequently unstable, reverting rather rapidly to an unsatisfactory form, or displaying a lack of power of resistance to disease. It therefore became necessary constantly to be producing new varieties to take the place of those that were worn out, and it seemed reasonable to anticipate that the professional botanist would take a much larger part in this work than had been the case in the past. Not only was the yield of a crop greatly influenced as regards quantity and quality by the variety of seed employed, but, as was well known to practical farmers, the local origin of the same variety of seed had a marked influence on many properties of plants (vigour, resistance to disease, and resistance to frost, and to weather generally), and these properties quickly reacted on the yield.

JOINT OR CO-OPERATIVE WORK.

In conclusion, he urged that it was by systematised co-operative effort that the practical value of an idea was tested, and that the knowledge was made available and acceptable to the work-a-day farmer. Various objections had been urged against field experiments, and it need not be denied that they were incapable of supplying a satisfactory answer to many scientific questions. Such experiments were exposed in no small degree to the disturbing influences of inequalities of soil, irregular cultivation, the attack of animals, and the vicissitudes of climate; but when reasonable precautions were taken to guard against these, and given a sufficient number of tests, the results of field trials were of the highest value as a guide to practice. Apart from attention to the preliminary details of the scheme, and to care in carrying it out, the main point to aim at in field trials was to have them so frequently duplicated or repeated that the disturbing factors inseparable from field work would be largely eliminated. One of the largest and most successful agencies in co-operative demonstrations was to be found in Canada, where, during the past nine years, an average of 37,000 farmers had annually received small parcels of improved seeds through the Government experimental organisation directed by Dr. Saunders. It was claimed that the financial results to the country as a whole ran to many millions of dollars, and there seemed to be no reasonable doubt as to the accuracy of the statement. In his opinion one of the best pieces of work that had been done in this country in recent years was the preparation of the scheme of joint experiments by the Agricultural Education Association. The problems set for solution under that scheme were of the simple, direct, practical kind that field work was thoroughly qualified to deal with. But the essence of success lay in the power of numbers, and the control of this factor rested with the members of the Association themselves. Most of the members of that Association were not only investigators but also teachers, and many of the institutions that they represented had recognised the advantages of keeping in touch with their past pupils through the agency of collegiate associations. These old students, it seemed to him, represented a large mass of most valuable material for carrying through co-operative experimental work of the class referred to, and he was convinced that the agriculture of the country would benefit in no small degree were this powerful agency fully utilized.

Professor W. O. ATWATER, Chief of the Nutritive Investigations, United States Department of Agriculture, gave a brief account of the progress of agricultural experimenting in the United States, referring especially to the support which it received from the National and the State Governments, to the agricultural experiment station movement, and to the United States Department of Agriculture. The first agricultural experiment station, he said, was organised in the chemical laboratory of the Wesleyan University in Middletown, Connecticut, he himself being its first director. Other States soon followed this example, and the experiment stations proved so useful that in 1887 the Federal Congress made the enterprise national by providing for the establishment of stations in all the states and territories of the Union. Their success had been noteworthy. There were now nearly sixty of these institutions. They received nearly £200,000 annually from the Federal Government, and enough from the State Governments and other sources to make their annual revenue considerably larger. They employed 600 or 700 persons in scientific investigation. They studied problems of chemistry, physics, physiology, botany, and so on, in their application to farming, and to this end they came in close contact with the intelligent agriculturists and were constantly communicating to them the results of their inquiries. These inquiries were conducted for the most part in connection with colleges and universities, and the experiments were made in the field, the garden, the stable, and the dairy. No less important—indeed, more so—was the United States Department of Agriculture, which had grown within the last twenty-five years from a comparatively unimportant branch of the Government to be practically the largest scientific establishment in the world. It received an annual appropriation of over £1,000,000, and, while much of its work was administrative, it employed over 2,000 persons in the work of scientific

investigation. It issued last year 938 publications. The total number of copies issued was nearly 12,000,000, of which 7,000,000 were so-called "farmers' bulletins"—that was to say, short pamphlets condensing the information obtained by the Department and the experiment stations. Each experiment station also published a large number of scientific reports and bulletins.

(Report of Discussion condensed from "The Times," August 20.)

PLANT STEMS.

August 22.—In the Botanical section Lord Avebury read a paper on the forms of stems of plants. Some had round stems, some square, some triangular, some pentagonal. What was the reason for this and other forms? It was, of course, important for plants, as for architects, to obtain the greatest strength with the least expenditure of material. To do this it was necessary that the plant should be equally liable to rupture at every point where the strain was equal; otherwise a certain amount of material might be removed from the strongest part without decreasing the danger of rupture. If the stem of a plant or any other pillar was affected by pressure—say of wind—one side would be stretched, and the other compressed, while between them would be a neutral axis, and both stretching and compressing would be the greatest along the surface farthest from the neutral axis. It followed, therefore, that the strongest form was where the material was collected as far as possible from the neutral axis, and Lord Avebury showed that on this hypothesis the prevalent form of stem would be that in which the fibres were arranged circularly about the neutral axis, and the stem itself would be circular. The question then arose, Why was this form not universal? As regards plants that had quadrangular stems, Lord Avebury pointed out that when the leaves were in opposite pairs, each pair at right angles to those above and below, the strain would be mainly in two directions. If so, we should expect to find quadrangular stems associated with opposite leaves. He then took the British flora and showed that plants with quadrangular stems always had opposite leaves, and that plants with opposite leaves had generally—though with exceptions—quadrangular stems. Passing to triangular and pentagonal stems, he pointed out that they might be accounted for by the consideration that many monocotyledons, but not all, have the leaves in threes. Sedges, for instance, all had more or less triangular stems, while in grasses they were round. Now, sedges had leaves in threes, while in grasses they were in two rows or ranks. The bramble, with its pentagonal stem, had its leaves in whorls of fives.

LILIUM PHILIPPINENSE.

(SEE FIG. 83, P. 211.)

THIS is an old species that was originally introduced from the Philippine Islands, in 1873, by Messrs. Jas. Veitch & Sons. It was described by Mr. J. G. Baker in the *Gardeners' Chronicle* for August 23, 1873. We are induced to reproduce the illustration that appeared with the original description, owing to the interest awakened in America by the discovery of a large quantity of plants growing in a wild state, as we are informed by representatives of Messrs. Farquhar & Co., in an island situated between the Philippines and Formosa. On September 8, Mr. John K. M. L. Farquhar, of the firm of Messrs. R. & J. Farquhar & Co., Boston, U.S.A., showed us a quantity of flowers he had cut from plants growing in the Boston Nursery, and which had been brought by himself across the Atlantic in a cut state. They were very beautiful indeed, being quite fresh, and their strong perfume was indistinguishable from that of a Gardenia. As will be seen in the illustration, the plant has a most elegant appearance, the slender, recurving leaves being not more than one-fifth of an inch wide. The flowers were about 8 inches long, and the segments spread out only near the apex, the tube being exceedingly slender. Mr. Farquhar informed us that the species is quite hardy, his bulbs having been frozen hard again and again without receiving any injury. In America the species has been used for forcing purposes, and Mr. Farquhar stated that the bulbs will flower in less than half the time required to force *L. longiflorum*. As the Boston firm has a very large quantity of bulbs under cultivation, it is likely to become more common in gardens; therefore we take this opportunity to draw the attention of our readers to this very beautiful species.

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

SEPTEMBER 6.—*Present*: Dr. Cooke (in the Chair), Mr. J. Douglas, Dr. Rendle, Mr. Holmes, and Rev. W. Wilks.

Pink Mould on Charred Wood.—Dr. COOKE reported that the pink mould on burnt wood, sent by Mr. Saunders, was common on all kinds of vegetable

come from Foxgloves which harmed other plants. She was also suspicious of *Nicotiana affinis* having the same effect, as plants near either seemed to languish. It was considered that any harm could only be done by the shade of the large leaves, or by the roots devouring all the food in the soil.

Diseased Oak.—Lady MARY HERBERT sent specimens of disease in roots of Oak. The specimens plainly showed the marks of injury, and the disease had evidently been caused by water entering through the injured parts and causing ordinary decay.

BATH FLORAL FÊTE AND SUMMER SHOW.

AUGUST 31 and SEPTEMBER 1. This Society has been in existence for fifty-three years. A summer show has always been one of its principal features, and this year's display was held on the above dates in the Sydney Gardens. There was a pitiless downpour of rain as at Shrewsbury, which lasted until the middle of the afternoon, seriously affecting the attendance. The exhibits of plants were of the usual high standard, also cut flowers, fruit and floral decorations. Vegetables were also good, these being arranged in the open.

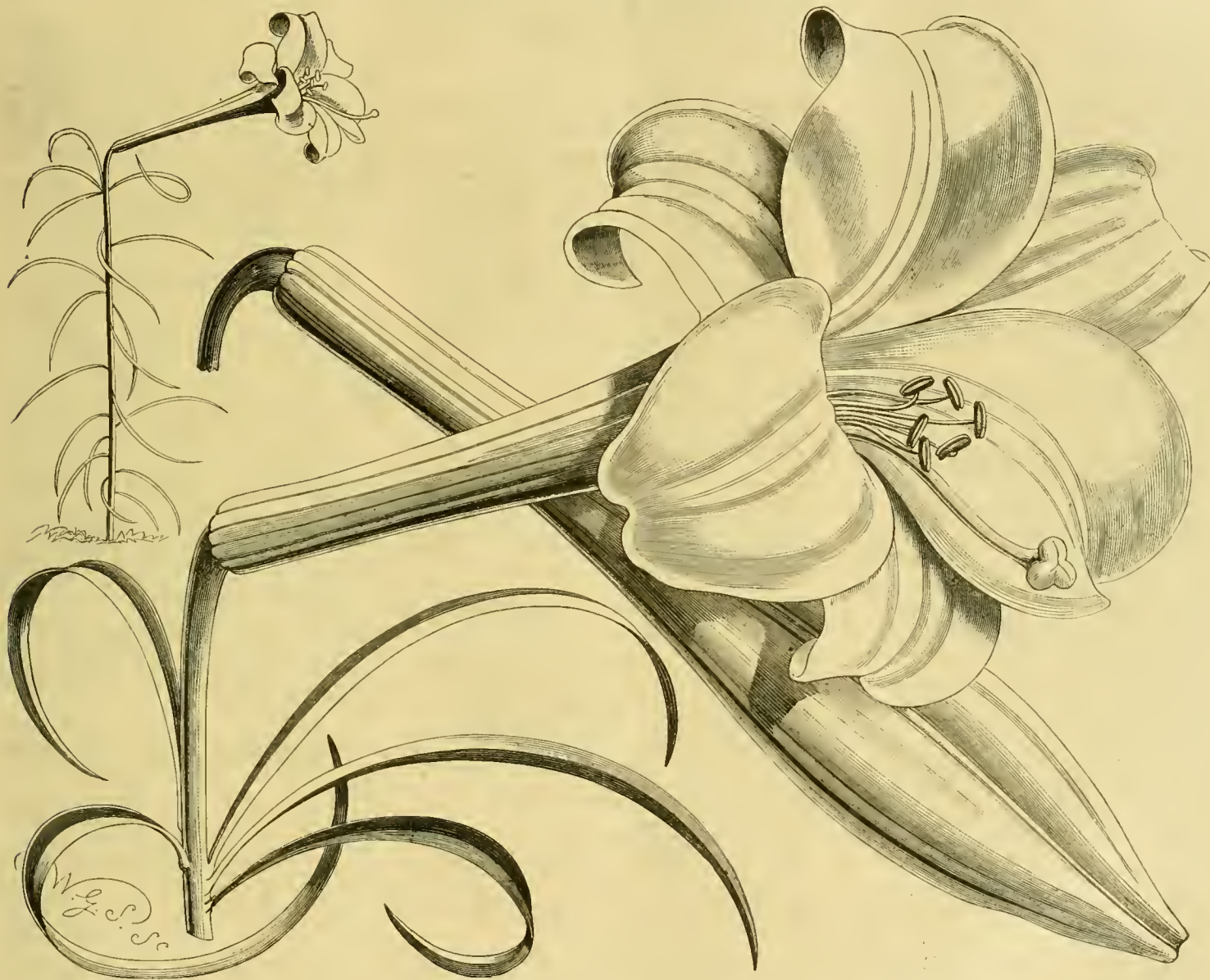


FIG. 83.—LILIUM PHILIPPINENSE: FLOWERS WHITE.

Recently re-discovered in considerable quantities. (See p. 210.)

matter, dead or decaying, and had recently been claimed as a parasite on Apples (*Journal of the Royal Horticultural Society*, xxviii., p. 233). The conidia are profuse, colourless, elliptical, and uniseptate when mature. It is called *Cephalothecium roseum*.

Orchid Leaves.—Dr. COOKE reported that the light-coloured spots on a *Cypripedium*-leaf forwarded by Mr. Douglas were deficient in chlorophyll and semi-transparent, but contained no trace of fungi. The dark-coloured spots appeared to be scars from wounds, but contained no trace of fungi.

Plicatancy of Carnations.—Miss HARRISON, of Wington, sent several specimens.

Supposed Damage from Foxglove.—Lady ROSCOE enquired whether some deleterious substance did not

Chermes laricis.—Lady HERBERT also sent specimens of Larch attacked by this pest, now only too common. Nothing could be done, except to use one of the soft-soap and paraffin sprays.

Soil.—Mr. DEAN, gr. to E. Powell King, Esq., Wainsford, sent specimens of soil which it was proposed to use for Peach-trees. It showed brown, thread-like marks, following the decay of some previously-existing roots. It was considered unsuitable for the purpose, as likely to engender fungus.

Nut-mite.—ADOLPH REIKMANN, Esq., Nottingham, complained that, having been compelled to destroy his black Currants on account of the bud-mite, the insect (or one very like it) seemed now to be attacking his Filbert-nuts.

The staging and judging were done under great difficulties.

One large tent was devoted to plants, of which the leading class was for twelve specimens, six in bloom and six of ornamental foliage. Messrs. CYPHER & SONS, Cheltenham, were placed 1st with *Ixora Duffii* and *L. Williamsii*, two *Allamandas*, *Erica Eweriana*, *Statice profusa*, and some finely coloured *Crotons*; Messrs. J. D. WOOD & SON, Chipping Sodbury, were 2nd. Messrs. CYPHER & SONS were also 1st with six ornamental foliage plants, for single specimen plants, and for the best nine stove and greenhouse plants in flower.

Messrs. E. COLE & SONS, Bath, had the best group of eight ornamental foliage plants. Mr. G. HALLETT, Bath, was 2nd.

Messrs. CYPHER & SONS, were 1st with a large group

of plants arranged for effect, having one of their usual elaborate exhibits. Messrs. E. COLE & SONS were 2nd.

Other plants exhibited included finely-grown specimens of Begonias, exotie Ferns, zonal Pelargoniums, Gloxinias, Liliums, Cockscombs, Petunias, Coleus, &c.

Fuchsias were a feature. In the class for nine specimens, Mr. W. H. TUGWELL, Bath, was 1st with well-grown and flowered plants of dark and light varieties, including Western Beauty, a very fine light-coloured Fuchsia. Mr. H. POCKOCK, Trowbridge, was 2nd.

With six specimens Mr. GEO. TUCKER, Trowbridge, was 1st. Mr. G. TUCKER had the best specimen dark variety in Masterpiece; and Mr. W. H. TUGWELL the best light variety in White Queen.

Cut-flowers made a great display: Dahlias were in good form. Messrs. J. CRAY & SON, Frome, were 1st with twenty-four show blooms, chief among them being Mrs. W. Slack, Mrs. Langtry, Goldfinch, Chieftain, R. T. Rawlings, Excellent, John Hickling, Keynes A 1, &c. 2nd, Mr. GEO. HUMPHRIES, Chippenham.

With twelve blooms Mr. GILBERT, Dersley, was 1st, and Messrs. FRECKER & SONS, Frome, 2nd.

Messrs. CRAY & SON came 1st with nine fancy Dahlias, having the following in good character:—Rev. J. B. M. Camm, Mabel, Miss Browning, Mrs. John Downie, Prince Henry, &c. Mr. HUMPHRIES, 2nd.

Bunches of single varieties were shown by Messrs. J. CRAY & SON, who were 1st; and Mr. T. CARR, Bath, 2nd. Mr. GEO. HUMPHRIES came 1st with twelve bunches of Cactus varieties; Messrs. CRAY & SON being a close 2nd. The latter firm was 1st for twelve bunches of Pompon Dahlias; while Mr. G. HUMPHRIES was 2nd.

Roses were very good considering the late season. The best twenty-four blooms were staged by Messrs. J. JEFFERIES & SONS, Cirencester. Messrs. PERKINS & SON, Coventry, were 2nd.

Mr. JOHN CROSSING, Penarth, had the best twelve blooms; and Mr. JOHN MATTOCK was 1st with the same number of Teas and Noisettes, good blooms being staged.

Twelve vases of Roses, containing five trusses of one variety, made a pretty feature, Mr. JOHN MATTOCK, Oxford, taking the 1st prize with an excellent exhibit which was much admired.

Gladioli were also an attractive feature. Mr. JOHN MATTOCK was 1st with thirty-six spikes in good character. Mr. W. T. MATTOCK, Oxford, was 2nd.

Messrs. A. A. WALTERS & SON, Bath, took the 1st prize with twelve spikes.

Asters are always well shown and numerous at Bath; the quilled varieties shown in twenty-four blooms were of good colour. French Asters were represented by the Victoria type; the Peony-flowered Asters are now rarely seen; the Comet type, in collections of twenty-four blooms, were also very good.

Other cut flowers included zonal Pelargoniums, shown in very fine trusses; stove and greenhouse cut flowers, in which Mr. GEO. TUCKER took the 1st prize with twenty-four excellent bunches. Mr. GEO. HALLETT was 2nd.

Collections of hardy flowers, to occupy a space of 36 superficial feet, made a show in themselves, but there was too much crowding generally to be effective; Messrs. A. A. WALTERS & SON, Bath, were 1st, and Mr. F. DAVIES, Frome, 2nd. Hardy annuals were also finely shown in bunches of twenty-four; Salpiglossis, Zinnias, African Marigolds, and Gloxinias were also shown in a cut state.

Floral decorations were represented by tables, cpergues, bouquets, and other arrangements, all well executed.

Fruit occupied a large tent. Apples and Pears were numerous and good. The best collection of eight dishes came from Mr. J. W. FLEMING, Romsey (gr., Mr. Mitchell), who had excellent Gros Maroc and Muscat of Alexandria Grapes, Dymond Peaches, Pine-apple Nectarines, Plums, Apples, and Melons. The Right Hon. W. LONG, Rood Ashton (gr., Mr. W. Strugnell), came 2nd.

Mr. MITCHELL was also 1st with eight bunches of Grapes; Mr. W. MARSH, Bath (gr., Mr. Taylor), came 2nd. Both collections were good. Mr. MITCHELL was 1st with three bunches of Black Hamburg Grapes; and Mr. TAYLOR, 2nd.

With two bunches of Muscat of Alexandria, Mr. TAYLOR was 1st with finely-finished bunches; and Mr. MITCHELL, 2nd.

Peaches, dessert and culinary Plums, Nectarines, Figs, Cherries, Nuts, and Filberts were well shown in the various classes.

Three dishes of Pears were represented by thirty-one entries, the best, from Mr. H. C. HOLDEN, were Pitmaston Duchess, Beurré Clairgeau, and Doyenné du Comice.

There were thirty-one entries for three dishes of dessert Apples.

Of forty-eight single dishes of dessert Apples, Beauty of Bath, Lady Sudeley, and Worcester Pearmain were placed in the order named.

Collections of culinary Apples were numerous, and aroused strong competition.

The vegetables were staged in the open, and in the drenching rain notetaking was practically impossible, but the exhibits were numerous and generally of good quality.

Miscellaneous collections included fruiting Apple-trees, Apples, and various cut flowers from Messrs. Cooling & Sons, Bath; Begonias from Messrs. Blackmore & Langdon, Twerton; a large collection of Phloxes, Pentstemons, Delphiniums, &c., from Messrs. I. House & Son, Westbury-on-Trym; hardy flowers from Messrs. B. Ladhams & Son, Shirley, Hants; Roses, Dahlias, &c., from Messrs. JARMAN & Co., Chard; cut flowers from Messrs. GARAWAY & Co., Durdham Down; Dahlias, &c., from Messrs. Rich & Co., Bath; hardy flowers, &c., from Mr. M. Prichard, Christchurch; a collection of cut zonal Pelargoniums from Mr. V. Slade, Taunton; and Violas from Mr. W. L. Pattison.

WARLEY COTTAGE GARDEN AND FARM PRODUCE SHOW.

THIS took place in the grounds of Warley Place, the residence of Miss Willmott, on the 1st inst., and though the morning was very wet, the weather cleared soon after mid-day, and the village sports were held during the afternoon. Despite the weather there was a remarkably good attendance. The schedule of prizes of 114 classes was a very comprehensive one, and included plants, cut flowers, fruit, and vegetables, the former including plants grown in windows, collections, and nosegays of wild flowers, collections of wild fruits, &c.; while the domestic life of the cottagers was stimulated by prizes for cooked Potatoes, loaves of bread, cakes, suet-puddings, home-made jams, honey, examples of handicrafts and needle-work; farm produce, including sheaves of Wheat, Barley, and Oats; also for poultry, ploughing, &c. Miss Willmott being desirous of interesting in every way the cottagers of Warley and adjacent parishes.

Mr. PREECE, the gardener at Warley Lodge, staged a bold group of plants, and a large collection of excellent fruit. Messrs. WALLACE & Co., Colchester, had an excellent collection of cut flowers and pans of very fine Colechicums. Messrs. J. LAING & SONS, Forest Hill, had a group of Begonias; and Mr. JOHN RUSSELL, Brentwood, a large outdoor group of ornamental shrubs.

THE DÜSSELDORF EXHIBITION.

DISPLAY OF ORCHIDS.

SEPTEMBER 3, 4, 5, and 6.—The promoters of the Orchid display, held on the above dates at the Düsseldorf International Exhibition, may be congratulated on the result of their efforts, for there was a splendid collection of Orchids exhibited. The display showed how hybrid Cattleyas and Lælio-Cattleyas are contributing to make Orchid-flowers more numerous in autumn than they have ever been at that season. From the amateurs came several very fine groups, staged with good effect.

Mons. FIRMIN LAMBEAU, of Bruxelles, sent a grand collection, amongst which were noted Cattleya Harrisonæ alba, C. Mossiæ alba, C. Atalanta, C. Pittiana, and C. Gaskelliana alba; Vanda Lowii, Lælio-Cattleya blancheyensis, L.-C. Admiral Dewey, Cyripedium Frau Ida Brandt, C. Memoria Moensi, and a very fine plant of Miltonia vexillaria.

Baron FÜRSTENBERG, Mintaris, near Düsseldorf, also staged a good group of showy varieties as well as a collection of botanical species. Some of the plants noted were two very fine specimens of Lælia elegans Turner's variety, Cattleya × Iris, C. Chamberlainiana, Lælio-Cattleya blancheyensis, Phalenopsis Rimsteadiana, P. amabilis, P. rosea, Pachystoma Thompsonianum, Epidendrum cochleatum Rodriguezia decora, &c.

Mr. H. C. HACKE, Baarn, Holland, had a small collection comprising good Cyripediums, Lælio-Cattleyas, Vanda cœrulea, Calanthe veratrifolia, &c.

Among the trade groups for competition, M. A. A. PETERS, Brussels, staged a grand collection of hybrids, to which an extra prize was given. Included in this group were Cattleya Pittiana var. Kronprinz, C. Hardyana, C. Ella, Lælio-Cattleya Admiral Dewey, L.-C. eximia, L.-C. Alcides, and Lælia elegans. At one end of this group were twelve very fine plants of Vanda cœrulea. At the other end a batch of Cyripedium hybrids of the Rothschildianum types. M. CHAS. MARON, Brunoy, France, obtained 2nd prize for a good group of his showy hybrids of the Lælio-Cattleya "callistoglossa," "eximia," "Adonis," and "Henry Greenwood" types. M. MAURICE VERMONT, Ghent, was placed 3rd for a group including Houletia Brookhurstiana, Vanda cœrulea, Odontoglossum grande, O. Harryano-crispum, and Cattleya Harrisonæ.

Messrs. DRAPS DOM, of Brussels, and Messrs. WOLF of Düsseldorf, sent collections of Cyripediums.

The Marquis DE WAVRIN, Ghent, sent a fine specimen of Lælia elegans, and a grand plant and good variety of Vanda cœrulea.

The non-competitive groups were also very good. Mr. OTTO BEYKOT, Marienfelde, Berlin, covered a very large space with a magnificent display of the popular varieties, such as Cattleya Harrisonæ, C. gigas, C. aurea, Oncidium varicosum, Vanda cœrulea, Odontoglossum grande, Cyripedium canthum. In this group also was exhibited a magnificent variety of Cattleya gigas called "Imperator," the flower measuring 10 inches across the petals. The variety was awarded a special prize, and is probably the largest Cattleya yet seen.

Messrs. CHARLESWORTH & Co., of Bradford, England, staged a very choice group, which was awarded a Silver Vase, to be specially made and decorated. The group contained three plants of the remarkable Cattleya Iris, Cattleya Chamberlainiana, C. Vulean, Lælio-Cattleya Professor Fritz Röber, L.-C. luminosa, L.-C. blancheyensis, Brasso-Cattleya Mme. Chas. Maron, Cyripedium Milo, C. Frau Ida Brandt, C. Gravesia, C. Mons. F. Lambeau, Cynoches chlorochilon, Bulbophyllum Lobbi colossus, &c.

Messrs. HUGH LOW & Co., London, had a group comprising well-flowered plants of Cattleya Harrisonæ, C. aurea, C. Gaskelliana, Odontoglossum grande, Dendrobium Phalenopsis, &c. Communicated.

ALNWICK HORTICULTURAL.

SEPTEMBER 8.—The annual exhibition of the Alnwick Horticultural and Botanical Society took place in the beautiful Abbey Grounds, Alnwick, the property of the Duke of Northumberland. There were 193 classes provided this year, and the entries were numerous, the usual keen rivalry among the various competitors being well maintained; the exhibits excited a good deal of interest, and the exhibition in every respect was an excellent one.

The entries in classes for greenhouse and stove plants were numerous. In this section Mr. T. Suffield, of Darlington, was very successful.

Cut flowers and table decorations made a good display. In these classes the principal prize-takers were Mr. Thomas Battersby, Blaydon; Messrs. Harkness & Son, Bedale, Yorks; Messrs. F. Edmondson, Newcastle; G. Webster, Sunderland; J. Arkless, Gateshead; A. Oliver, Morpeth; T. Patton, Shilbottle, &c.

For vegetables in the open class, Mr. T. Robinson, of Prudhoe, was awarded nine 1st prizes. Other prize-winners in this class were Messrs. A. Briggs, Felton; A. Tait, North Sunderland; W. Watson, Woodhorn; G. Davison, Warkworth; R. Brewis, Alnwick; and J. Henderson, Glanton.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 9.—The meeting held on this date was in conjunction with the Dahlia show at the Royal Botanical Gardens, Old Trafford.

W. FARRER, Esq., Leyburn, Yorks (gr., Mr. Cornell), exhibited a very good hybrid Cyripedium, a cross between C. × T. B. Haywood × C. Charlesworthii, and named C. × leyburnense. This is certainly one of the best products of the latter parent, and the flower is well formed and richly coloured (Award of Merit).

Mrs. S. GRATRIN, Whalley Range (gr., Mr. Cypher), exhibited Cyripedium × Milo, Westonbirt variety (Award of Merit).

G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr., Mr. Shill), staged a group of good plants, amongst which were several showy Lælio-Cattleya hybrids (Silver Medal).

Dr. HODGKINSON, Wilmslow (gr., Mr. Woore), was awarded a First-class Certificate for a good albino form of Cattleya Gaskelliana called C. Gaskelliana var. Hodgkinsonii. The lip was coloured, but the sepals and petals were pure white. P. W.

EMSCOTE HORTICULTURAL SHOW.

SEPTEMBER 10.—The second annual show of the Emscote District Horticultural Society was held on the above date, and proved a great success, there being upwards of 700 entries. The exhibits were very meritorious, especially the fruit. The Rt. Hon. A. Lyttelton, K.C., gave a prize for the best collection of six varieties of vegetables. A collection of forty dishes of hardy fruits not for competition was shown by Mr. Marsh, Priory Nursery, Warwick, and a collection of plants, Grapes, Melons, and choice fruit was contributed from the Ranelagh Nurseries Co., Leamington.

ROYAL CALEDONIAN HORTICULTURAL.

SEPT. 14, 15.—This proved one of the best exhibitions of those held by the Society in recent years, the show of fruit and flowers in particular being very fine. The new class instituted by Mr. Massie caused a great interest among gardeners, the Grapes in the 1st and 2nd prize exhibits being so nearly equal in quality as to maintain the interest during the whole of the first day. The show was opened (with Lord Balfour of Burleigh as chairman) by the Marchioness of Linlithgow, the Waverley Market being crowded by visitors at the time.

DESSERT FRUIT.

The first class was for a table of dessert fruit, 10 feet by 4 feet 6 inches, decorated with plants in pots not exceeding 5 inches, and (or) cut flowers, Orchids excluded, and (or) foliage; not more than sixteen dishes of fruit. Mr. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, and Mr. Kidd, gr. to Lord ELPHINSTONE, Carberry Towers, were the only exhibitors, the former securing 1st prize for fruit with 117 points. He had fine Black Hambro' and Chasselas Napoleon Grapes, magnificent Pears, Peaches, Nectarines, Figs, Apples, and Melons. Mr. Kidd had good Appley Tower and Canon Hall Muscat Grapes, the smaller fruits being less good; the collection obtained 107½ points. For decoration the awards were reversed, Mr. Kidd's much lighter arrangement being placed 1st with 26 points, and Mr. Goodacre 2nd with 23 points.

COLLECTIONS OF FRUIT.

For a collection of ten dishes of fruit, not more than two dishes of Grapes (black and white), and one dish each of any other kind of fruit (confined to Scotland), there were four competitors, Mr. Kirk, gr. to J. THOMSON-PATON, Esq., Norwood, being 1st with well-finished Muscat of Alexandria and Madresfield Court Grapes, Barrington Peaches, Pineapple Nectarines, Melons, Figs, Pears, Apples, and Plums. Mr. Murray, gr. to the Marquis of AILSA, Culzean Castle, Ayr, was 2nd, having good Grapes and Peaches; and Mr. Smith, gr. to the Earl of STAIR, Oxenford Castle, 3rd, also with a good collection.

In a Class for a collection of twelve dishes of fruit, grown in an orchard-house, not more than two dishes (distinct varieties) of each kind, Grapes excluded, Mr. J. H. GOODACRE won 1st prize, having grand Gascoigne Scarlet and Newton Wonder Apples, grand Marguerite Marillat Pears, Sea Eagle Peach, Nectarines, Plums, Figs, and Apricots; 2nd, Mr. G. McKINLAY, gr. to Earl COWPER, Wrest Park, Bedfordshire; 3rd, Mr. Day, gr. to Earl of GALLOWAY, Galloway House, Garioch.

SCOTTISH CHALLENGE TROPHY FOR GRAPES.

This trophy, value 50 guineas, was offered by Mr. W. H. Massie for the best exhibit of eight bunches of Grapes, not more than two bunches of any variety. The 1st prize included a Gold Badge and £15 in cash.

Four competitors staged for this coveted prize, which was secured by Mr. J. H. GOODACRE with good, but not so fine Grapes as have been seen in Edinburgh. Muscat of Alexandria were large clusters to which 9½ and 7½ points were awarded; Madresfield Court, 7½ and 7; Gros Maroc, 6 and 5; Black Hambro', 7½ and 7. Messrs. BUCHANAN, Kippen, Stirling, were 2nd with large bunches, of which Muscat of Alexandria received 7½ and 7 points; Black Alicante, 7½ and 6½; Cooper's Black, 6; and Alnwick Seedling, 7½ points. Mr. Jas. BEISANT, gr. to Mrs. ARMISTEAD, Castle Huntly, was 3rd; and Mr. Green, gr. to Sir C. M. PALMER, Bart., M.P., 4th.

For four bunches of Grapes (distinct varieties), Mr. KIDD secured 1st prize, having good bunches of Madresfield Court, Appley Towers, Gros Maroc, and Muscat of Alexandria. 2nd, Mr. Hugh, gr. to Sir DUNCAN HAY, Kings Meadows; 3rd, Mr. DAY.

Two bunches of Muscat of Alexandria.—Mr. GOODACRE secured 1st prize with fine bunches, and Mr. GREEN was 2nd.

Two bunches of Black Hambro'.—There was a large competition in this class. Mr. D. BUCHANAN, gr. to Col. HAMILTON DAILLY, Ayr, won 1st prize with well finished bunches; Mr. Galloway, gr. to the Earl of WEMYSS, Gosford, being 2nd.

CLASSES FOR SINGLE BUNCHES OF SPECIFIED VARIETIES.

One bunch of Muscat of Alexandria.—Mr. GOODACRE was again 1st in this class; and Mr. DAY, 2nd.

The best bunch of the variety Black Hambro' was shown by Mr. BUCHANAN, Bargany, who had a small, well-finished bunch. Mr. Wright, gr. to W. L. ALEXANDER, Esq., Pinkieburn, was 2nd.

For one bunch of Black Alicante Mr. BEISANT was 1st with a small bunch; and Messrs. BUCHANAN, 2nd. Messrs. BUCHANAN showed the best bunch of Alnwick Seedling; and Mr. GREEN obtained 2nd prize.

Mr. KIDD had the best bunch of Lady Downes'; and Mr. Woodcock, gr. to Mrs. HAMILTON OGILVY, Archerfield, was 2nd.

For the variety Madresfield Court, Mr. R. Glen, gr. to J. H. H. GRAHAM, Esq., Larbert, was awarded 1st prize, and Mr. GOODACRE 2nd; but Mr. GOODACRE was 1st for Diamond Jubilee, having a splendid example; Mr. Leslie, gr. to Mr. COATES, Pitcullen House, Perth, was 2nd.

The best exhibit of one bunch of any new Grape introduced since 1885, came from Mr. KIRK, who had Directeur Tisserand, a variety not unlike Black Hambro'; 2nd, Messrs. BUCHANAN, with Diamond Jubilee.

The finest flavoured black Grape was adjudged to be Black Hambro', from Mr. BEISANT; and the finest flavoured white Grape Muscat of Alexandria from Mr. MURRAY. The bunch of black Grapes showing the finest bloom was of Gros Maroc, shown by Mr. GREEN.

MISCELLANEOUS FRUITS.

The best green-fleshed Melon was shown by Mr. HUGHES; while Mr. MURRAY, Culzean Castle Gardens, had the best scarlet-fleshed fruit in a large collection.

For a collection of dessert Plums in four varieties, Mr. Findlay, gr. to Count MUNSTER, Maresfield, was 1st; and Mr. GEO. MACKINLAY, Wrest Park Gardens, Beds, 2nd; but the best collection of culinary Plums came from Mr. SMITH; Mr. CHALMERS being 2nd.

Collection of Apples, twelve varieties.—Mr. WHITING, Hereford, obtained 1st prize with large and fine fruits; Mr. SMITH, Convent Gardens, Roehampton, being 2nd.

For a collection of Apples grown in Scotland, Mr. SINCLAIR was 1st with large, clean examples; Mr. WEBSTER, Gordon Castle Gardens, being 2nd.

The best collection of Pears in twelve varieties was from Mr. FINDLAY, Maresfield, who had very good fruits. Mr. McKINLAY was 2nd.

For a collection of Pears in six varieties grown in Scotland, Mr. DAY was 1st; and Mr. Cairns, gr. to the Earl of HOME, The Hirsell, 2nd, the fruits being rather undeveloped.

In the single dish classes there was good competition, the fruit being of superior quality. The chief prizes were won by growers in the South of England.

GROUP OF MISCELLANEOUS PLANTS.

The chief class in the section for plants was that for a group of miscellaneous plants arranged on the floor to produce the best effect within a circle of 18 feet in diameter. Mr. HUGHES was 1st, and showed one of the finest groups seen of late years in Edinburgh, the material being excellent and the arrangement very good. Mr. Knight, gr. to Sir W. LAWSON BRAYTON, was 2nd.

There were the usual exhibits of specimen plants, Orchids in one or two classes, Ferns, Codiceums, Cordylines, Begonias, Fuchsias, Liliiums, and other decorative plants.

CUT FLOWERS.

Mention may be made of double Begonias from Rev. Mr. ROJGER, Preston Park, which were very fine; Sweet Peas, of which there was a great display, the best being from Mr. DUNCAN, Fogo, Duns. Dahlias, Roses, and Carnations were well represented, the last-named being very fine for the late season.

The class reserved for ladies for the best decorated dinner-table, measuring 5 feet by 3 feet, was competed for by two ladies, Mrs. DUNCAN, Fogo, Duns, being 1st with a graceful arrangement.

VEGETABLES.

These were, as usual, shown in enormous numbers. The chief prizes were offered for a display of vegetables, each competitor being allowed a table space of 6 feet in length by 4 feet in width. The 1st prize was secured by Mr. HARPER, Tulliallan, Perth, for a fine lot of produce; Mr. STUART, Thirlstane Castle, being 2nd.

NURSERYMEN.

The Nurserymen's section was confined solely to cut flowers, Dahlias and Roses forming the bulk of the material. Mr. MUIR, Prestwick, secured the 1st prize for thirty Gladioli with fresh, clean spikes. Mr. SMELLIE, Bushby, was 1st for Cactus and Show Dahlias. Mr. CAMPBELL, High Blantyre, securing 1st for a collection of Dahlias, the individual blooms being fine; also for Cactus Dahlias in vases.

The class for a collection of Roses on a space 6 feet by 5 feet, was entered by two competitors, Messrs. J. COCKER & SONS, Aberdeen, winning 1st prize with fine show blooms and a large number of flowers of the garden section. An arch of the variety Dorothy Perkins was very lovely. Messrs. W. & R. FERGUSON, Binefield, Dunfermline, were 2nd with a good display of blooms.

Messrs. COCKER were again 1st for twelve vases of blooms showing varieties in perfect condition.

For thirty-six Roses the Aberdeen Roses again were placed 1st, being fresh and well coloured.

For eighteen Roses Messrs. D. & W. CROLL, Dundee, won 1st prize. This firm secured 1st prize also for twenty-four Tea Roses, with fresh and neat buds.

Mr. H. DICKSON, Belfast, with the variety Hugh Dickson, secured 1st prize for twelve crimson Roses in a good class.

Messrs. FERGUSON, with lovely flowers of the variety Mrs. J. Laing, won 1st prize for twelve pink Roses; and Messrs. COCKER, with fine examples of Frau Ka I Druschki, 1st prize for twelve white Roses. Altogether the Roses formed one of the features of this fine exhibition.

A new feature was a class for a dinner-table 5 feet by 3 feet, decorated with cut flowers and foliage. The prizes were very small for so important a class. Messrs. CAMPBELL & SONS, Blantyre, won the chief honour.

NURSERYMEN'S NON-COMPETITIVE EXHIBITS.

Nurserymen made a famous display of plants and cut flowers.

Messrs. T. METHVEN & SONS, Prince's Street, contributed several groups of Lilies and foliage plants.

Messrs. CUNNINGHAME, FRASER & CO., Comely Bank, contributed a collection of shrubs.

Messrs. CUNNINGHAME, FRASER & CO., also showed a collection of extra fine flowers of herbaceous perennials, the Tritomas being a special feature.

Mr. JOHN DOWNIE, Murrayfield, had a nice composition of flowering and foliage plants, in which standards of Hydrangea paniculata were conspicuous.

Mr. JOHN DOWNIE also contributed a table of cut flowers, mainly Roses, Carnations, and Dahlias.

From Messrs. STORRIE & STORRIE, Dundee, came an admirable collection of Apple-trees in pots profusely cropped, with examples of Celosia, &c., interspersed among the pots.

Messrs. R. B. LAIRD & SONS, Ltd., Pinkhill, formed a huge rockwork which occupied the whole space at the west end of the building, Japanese Maples, Conifers, Hydrangeas, and Liliiums being the chief plants employed.

Messrs. J. COCKER & SONS, Aberdeen, staged a nice lot of flowers of herbaceous plants, Gladioli, Tritomas, &c.

Messrs. J. GRIEVE & SON, Pilrig, contributed florists' flowers.

Mr. A. YOUNG, Elgin, had a number of Gladioli, Sweet Peas, and border flowers.

Mr. LISTER, Rothesay, contributed Violas and fancy Pansies, and Lister's Prolific Tomato.

Mr. C. PAGE, Liberton, showed Chrysanthemums and Tomatos, a Silver Medal being awarded.

Mr. CAMPBELL, High Blantyre, showed florists' flowers in fine and neat varieties.

Messrs. GLASS, Liberton, staged early Chrysanthemums, a Bronze Medal being awarded.

Messrs. DOBBIE & CO., Rothesay, had florists' flowers in vast quantities, Cactus Dahlias, Show Dahlias, Pompon Dahlias, Roses, &c.

Mr. HENRY ECKFORD, Wem, had his usual display of Sweet Peas, a Silver Medal being awarded.

THE KINGS ACRE NURSERY CO., Hereford, staged some 100 dishes of Apples and other hardy fruits (Silver-gilt Medal).

Mr. JOHN FORBES, Hawick, contributed an excellent display of florist flowers. It included no fewer than 360 single blooms of Carnations, as well as a number of bunches of new Phlox, a lot of grand Pentstemons and Dahlias.

Mr. FARQUHAR, Comely Bank, Perth, staged some nicely arranged Carnations, Liliiums, Roses, Sweet Peas, &c. (Silver Medal).

AWARDS OF MERIT.

The Committee gave an Award of Merit to "White Forty-fold," a Potato from Mr. Taylor, Inveresk; to Mr. Pyne, Topsham, Devon, a Certificate of Merit for Apple "Rival"; to Mr. A. Frater, Ochiltree, an Award of Merit for Violet "Lady Grant"; to Mr. Brotherton, Tynninghame Gardens, an Award of Merit for Verbena "Afterglow," a rose-coloured sport from Miss E. Willmott; to Messrs. Cunningham & Fraser, a 1st class Certificate for hardy Fuchsia "Caledonia"; to Messrs. Laing & Mather, Kelso, an Award of Merit for rose-coloured Carnation "Lady F. Balfour," and for "Isabella Dickson," a yellow-ground Carnation.

GARDENERS' DEBATING SOCIETIES.

CROYDON AND DISTRICT GARDENERS'.—The members of this Society met on Tuesday, September 6, when Mr. C. W. Greenwood, of The Gardener, gave a paper on "Narcissus." The classification, cultivation, uses, &c., of this popular flower were explained. At the conclusion a discussion followed, and many questions were asked the lecturer. Mr. A. Edwards, Ambleside Gardens, staged a good collection of Apples, receiving a vote of thanks.

DONCASTER AND DISTRICT GARDENERS'.—The monthly meeting of this Society was held on Thursday, September 8, when Mr. Elliott, of Blyth Hall, lectured on "The Fertilisation of Flowers." The lecturer explained fully the anatomy of flowers, and illustrated his remarks by a series of interesting lantern-slides, remarking how flowers were formed to enable honey-gathering insects to cross-fertilise their species. At the conclusion several questions were asked and answered.

KEW NOTES.

ARISTOLOCHIA GIGAS VAR. STURTEVANTII.—This extraordinary climbing plant has been in flower for the past two months in the Victoria-house, having developed about forty of its gigantic blooms up to the present time. As I write, there are several fully expanded flowers, and a quantity of buds showing. When fully expanded, each measures 1 foot in length by 7 inches broad, and is suspended by a peduncle 9 inches long. The large hood-like perianth has a white ground colour, densely mottled with dark purple, the mouth of the inflated tube being almost black. A flower taken from the specimen measured 15 inches in diameter, and from the top of the flower to the point where the long tail is developed, it measured 20 inches; the total length from the top to the end of the ribbon-like tail was 5 feet. The flowers remain fully expanded for about twelve hours, they then gradually curl inwardly. Unfortunately the odour is not pleasant. This species is not difficult to cultivate successfully, its chief requirements being plenty of rich soil to grow in, and a position in either a stove or intermediate-house.

Cuttings should be taken in September, consisting of well ripened growths about a foot long, and they will soon make roots over a moderate amount of bottom-heat. Keep them in a stove during the winter, and by April they should be strong plants in 7-inch pots. At that time shift them into 10- or 12-inch pots, using a compost such as one would use for Cucumbers. When they have become well established in these pots, let them be given a final shift into larger pots or tubs. Care should be taken to use plenty of drainage material so that the plants may be afforded liquid manure frequently without any of the pots becoming water-logged. The plants should make flowering-shoots 20 feet long by the beginning of July.

COSTUS SPECIOSUS, Smith.

This beautiful species of a much-neglected genus is now flowering freely in the Nepenthes-house, where it will continue to produce its fleshy stems and large heads of handsome white flowers for a considerable period. The stems, from 3 to 4 feet in height, are clothed with deep-green leaves from 6 to 9 inches in length by 2½ inches in breadth. The inflorescence is a dense terminal head, often containing as many as thirty flowers, which open in succession; every head has usually about five flowers open at one time, each of which has a diameter of 2½ inches. There are about twelve species of *Costus* in cultivation at Kew. Other species now in flower are *C. igneus* and *C. elegans*, the latter with yellow flowers. Both these species are planted in the Nepenthes-house, where they grow vigorously. *Costus fissiligulatus*, flowering in the stove, has large flowers of a fine deep pink colour. *W. H.*

HORTICULTURAL PESTS AT HOME AND ABROAD.

—The difference of conditions under which the gardener and farmer labour here and at the Antipodes may sometimes be described in a very few lines, as at a recent meeting, at Arter-side, South Australia, of the local Agricultural Society. Mr. PEARSE read a paper on "The plea for the Garden," &c. He said he had found it important to keep out birds and vermin; a vermin-proof fence would keep out the latter, but the birds were more difficult to scare. He did not find it difficult to frighten sparrows and the small birds, which could be caught in traps, but the parrots were very troublesome to deal with. He had found that shooting was the only method of any value, and it was necessary to encourage the women to use a light handy shot-gun, as they were about the house all the time, whereas the men-folk were away so much. He had taught his wife to shoot, and now he found that on an average it did not take more than five or ten minutes of her time each day to keep the parrots away.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending September 10, 1904.

1904.	TEMPERATURE OF THE AIR.					TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
	At 9 A.M.		DAY.		LOWEST TEMPERATURE ON GRASS.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.							
	deg.	deg.	deg.	deg.							
SEPTEMBER 3 TO SEPTEMBER 10.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.	
MEANS	58	55	65	50	43	59	61	60	Tot 0.51	6	7

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Sept. 10, is furnished from the Meteorological Office:—

"The weather during this week was very unsettled in Ireland and Scotland, with almost daily falls of rain. Over England the conditions were finer, the rain being slighter, and confined to the middle part of the period. Thunderstorms were experienced at some stations in the north-west of England on the 6th, and in some northern and eastern localities on the 7th.

"The temperature differed little from the mean as a whole, but was 2° below it in England, S., and the Channel Islands. The highest of the maxima occurred at most stations on the 5th, and ranged from 79° in the Midland Counties to 68° in Scotland, N., and to 65° in Ireland, N. The lowest of the minima were registered on rather irregular dates, but mostly either on the 4th or 10th. In England, S. (at Swanton) the thermometer fell to 35°, while elsewhere the minima ranged from 37° in Scotland, E., Ireland, N., the Midland Counties, and England, N.W., to 41° in England, N.E., and to 51° in the Channel Islands.

"The rainfall greatly exceeded the normal in Scotland, N. and W., and in Ireland, S., and slightly in Ireland, N., and the Channel Islands; elsewhere the fall was less than the mean. More than an inch was measured in the north-west of Scotland on the first day or two, and in the south of Ireland later in the week. At Fort William on the 5th the gauge yielded 1.98 inch, the total fall for the week at that station amounting to as much as 5.05 inches.

"The bright sunshine was in excess of the mean generally, but just equal to it in England, S.W., and below it in Ireland, S., and the Channel Islands. The percentages of the possible duration ranged from 48 in England, N.W., to 30 in Ireland, N., and Scotland, E., and to 28 in Scotland, N."

THE WEATHER IN WEST HERTS.

A Cool Week.—During the past week there occurred only one warm day, and but one warm night. On the coldest night the exposed thermometer fell to within 3° of the freezing-point. The ground is consequently at the present time rather cold for the time of year. Rain fell on three days, but to the total depth of only about a quarter of an inch. Small amounts of rain-water came through the bare soil percolation gauge during the first few days of the week, but since then no measurable quantity has passed through it. The sun shone for 1½ hours a day, which is about half an hour a day less than is usual at this season. On two days no sunshine at all was recorded. The wind was variable in direction, and as a rule very light. The mean amount of moisture in the air at 3 o'clock in the afternoon was 2 per cent. in excess of the September average for that hour. *E. M., Berkhamsted, September 13, 1904.*

MARKETS.

COVENT GARDEN, September 14.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Euonymus, vars.,		
Arbor Vitæ, per doz.	9	0-18	per dozen	4	0-10
Aspidistras, per doz.	18	0-36	Ferns in var., per dozen	4	0-8
Asters, doz. pots	3	0-4	Ficus elastica, per dozen	9	0-24
Aucubas, per doz.	4	0-8	Fuchsias, per doz.	2	0-4
Australian Bush Ferns, dozen	10	0-12	Hydrangeas, doz.	12	0-18
per box	2	6-4	Lilium speciosum rubrum, per dozen	8	0-10
Balsams, dozen...	2	0-3	Lycopodiums, per dozen	3	0-4
Begonias, per doz.	6	0-8	Palms, variety each	3	0-20
Campanulas	3	0-4	Pteris tremula, p. dozen	4	0-8
Cannas	4	0-6	Tropæolum, per dozen	3	0-4
Chrysanthemums, per dozen	3	0-4	Verbenas, per dozen	4	0-6
Cocos	12	0-18			
Crotons, per doz.	12	0-24			
Cyperus, per doz.	3	0-4			
Dracenas, variety, dozen	6	0-18			

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alstrømeria, per dozen bunches	3	0-4	Lilium lancifolium	1	0-2
Asters, per doz.	2	0-6	Lily of the Valley	12	0-15
Bouvardias, doz.	4	0-6	Lobelia cardinalis, per dozen	3	0-4
Cape Gooseberry, per doz. bunch.	6	0-8	Mallow, per doz.	2	0-3
Carnations, doz. bunches	9	0-18	Marguerites, yellow, low, 12 bunches	0	9-16
Chrysanthemums, dozen bunches	6	0-9	Marguerites, white, dozen bunches	2	0-4
Coreopsis, p. doz.	0	6-1	Orchids, various, per dozen	2	0-8
Cornflower	0	9-1	— Cattleyas	6	0-12
Dahlias, per doz.	3	0-6	Pelargoniums, zonal, dozen bunches	3	0-6
Eucharis, doz.	2	0-3	— white, dozen bunches	4	0-6
Ferns, Asparagus, per bunch	0	6-1	— double scarlet, per doz. bun.	2	0-4
— French, 12 bun.	0	3-4	Phlox	3	0-4
— Maidenhair, doz. bunches	4	0-6	Pyrethrum, per doz. bunches	2	0-3
Gaillardias, doz.	0	9-1	Roses, Mermet, per bunch	1	0-2
Gardenias, box	1	0-2	— white, bunch	1	0-2
Gypsophila, doz. bunches	2	0-4	— pink, bunch	1	0-3
Gladiolus, white, doz. bunches	3	0-5	— red, bunch	0	4-1
— various, doz. bunches	3	0-6	— Safranos, per bunch	1	0-1
— red, per doz. spikes	1	0-3	Stellax, 12 bunch.	1	6-3
— dozen bun.	2	0-3	Statice, 12 bunches	3	0-6
Golden Rod, doz.	3	0-4	— Stephanotis	1	0-2
Heather, Scotch, per bunch	0	6-8	Stocks, 12 bunches	2	0-4
Honesty, bunch	1	0-2	Sunflowers	2	0-4
Lavender	2	0-4	Tuberose on stem, bunch	0	9-1
Lilium auratum, per bunch	1	6-3	— short, p. doz.	0	2-0
— Harrisii, per bunch	3	0-4			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen	4	0-6	Mushrooms (house), per lb.	0	6-10
Beans, dwarf, per sieve	2	6-3	Onions, green, doz. bunches	2	0-4
— Scarlet Runners, per bushel	4	0-6	— per bag	5	0-6
Beetroots, bushel	1	6-2	— per case	5	6-8
Brussels-Sprouts, sieve	1	3-2	Parsley, per doz. bunches	1	0-1
Cabbages, tally	2	0-2	— sieve	0	6
Carrots, doz. bun.	0	9-1	Potatoes, per ton	60	0-90
— bag	2	6-3	Radishes, per dozen bunches	0	9-1
Cauliflowers, doz.	1	0-1	Salad, small, punnets, per doz.	0	9
Celery, per dozen bunches	9	0-16	Shallots, sieve	3	0-3
Cress, doz. pun.	0	9-1	Spinach, p. sieve	1	0-1
Cucumbers, doz.	1	6-2	Tomatoes, Channel Islands, per lb.	0	2-4
Endive, per doz.	1	0-1	— English, doz.	2	0-3
Garlic, per lb.	0	2½	Turnips, doz.	1	0-2
Horseradish, foreign, p. bunch	1	0-1	— bag	2	6-4
Leeks, 12 bundles	1	0-1	Vegetable Marrows, per doz.	0	9-1
Lettuces, Cabbage, per dozen	1	6-2	Watercress, per dozen bunches	0	4-6
— Cos, per doz.	1	6-1			
Mint, doz.	1	0-2			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, bushel	1	6-3	Grapes, Muscat A, per lb.	2	0-3
— English, sieve or half bus.	1	0-2	B, per lb.	0	6-1
Bananas, bunch	4	0-10	— Canon Hall A, per lb.	3	0-5
— loose, dozen	1	0-1	B, per lb.	1	0-1
Blackberries, peck	1	6-2	Lemons, per case	6	0-18
Cobnuts, per lb.	0	4-1	Melons, each	0	6-1
Figs, per doz.	0	6-1	Nectarines, A, per dozen	8	0-12
Filberts, per lb.	0	2-1	— B, per doz.	2	0-4
Grapes, Hambro' A, per lb.	1	0-1	Oranges, per case	8	0-10
B, per lb.	0	4-0	Peaches, A, per doz.	6	0-12
Gros Maroc, lb.	0	8-1	— B	1	6-3
Gros Colmar, per lb.	0	9-1	Pears, per sieve	1	6-3
— Alicante, per lb.	0	6-1	Pines, each	2	0-3

REMARKS.—Prices for Runner Beans fluctuated very much during the past week. There are fruits of Passiflora from Jamaica 2s. to 3s. per dozen. Out-

door Mushrooms, 3d. to 4d. per lb.; per sieve, 1s. 6d. to 3s. Celery, unwashed, twelve heads in each bundle, 8s. to 18s. per dozen bundles; washed, eight heads in each bundle, 12s. to 16s. ditto. Brussels-Sprouts are now coming in. English Endive, 1s. per dozen. Grape-Fruits, per case, 10s. to 12s. Large Apples, such as Lord Derby and Warner's King, fetch 3s. per bushel. Pears, Hessele, 3s. per bushel; Williams, 5s. to 7s. ditto; French crates in variety.

POTATOS.

Various, home-grown, 60s. to 90s. per ton, John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

THE business of the past week has been very dull, and little that is fresh is coming in. The flowering plant trade is almost at a standstill. A few of the better Chrysanthemums sell well; of these the white Lady Fitzwigram is still the best. Many of the Madame Marie Masse and its varieties are seen; of these latter the yellow Horace Martin is the best. There are also some of good bronze colour. Zonal Pelargonium Raspaill and other varieties can still be had; Gladiolus brechenleyensis, with short sturdy flower-spikes and good foliage, is very pretty; Phylaxis Francheti is good in pots. For Zinnia elegans in pots there is no demand. Asters in pots go very slowly. Plants lifted from the ground and not potted are sold at a cheap rate, being used in the flower garden in the place of annuals and other plants that are passed. Among foliage plants Aralia Sieboldi is good, also Ficus elastica and Eulalia japonica variegata, the last-named, about 2½ to 3 ft. in height, in 32s. Cyperus alternifolius in 48s are well grown. Codium (Crotoms) and Cordylines (Dracenas) of the bright-coloured varieties are offered cheaply. Palms of all sizes are plentiful, and are quoted at low prices. Ferns are plentiful in all sizes. The Asplenium nidus is particularly bright, but with some growers the mite has been very troublesome, and proves most difficult to destroy. Adiantum decorum is good, and A. cuculatum is quite plentiful now. In choice Ferns I noted plants of Nephrolepis Duffii, Gymnogrammas, Dicksonia antarctica and others. Shrubs in pots are plentiful, and there are also plants of Retinospora plumosa aurea and other varieties from the open ground. These look very bright and fresh compared with those that have been grown nearer London.

CUT FLOWERS.

Yellow flowers are very abundant. The Golden Rod (Solidago virgaurea) is seen in large bunches. Helianthemum pumilum, H. autumnale, and H. striatum are all prominent. Coreopsis grandiflora and the yellow Marguerites are also plentiful. There are many yellow Chrysanthemums; the bronze and white Chrysanthemums are also good. Some better Roses are now coming in, but most of these from the open ground have their foliage injured by mildew. Carnations are not plentiful. The white Gladioli are nearly passed, also G. brechenleyensis, but there are now many of the hybrid varieties in the market. Lilliums continue over plentiful; some fine coloured blooms of L. speciosum rubrum are to be seen. Zonal Pelargoniums King of Denmark and Raspaill are plentiful; there is also good white show Pelargonium bloom. Lapageria (white), Eucharis, Tuberoses, Gardenias, and Lily of the Valley are all plentiful. Dahlias and Asters are in great abundance. Gypsophila paniculata is now nearly over; there is still plenty of G. elegans to be had. The Statice are not quite so plentiful, but there is still some good S. Gmelini. Helianthus multiflorus grandiplexus (Soleil d'Or) is very showy. Of Orchid bloom, Cattleyas are plentiful; Cypripedium Lawrenceanum and Odonoglossum grande can also be obtained. Good Panerarium blooms are seen. Phylaxis Francheti is now brought in immense quantities. Aster Amellus and A. acris, also a few other varieties, are now being sold. Cut Fern and other foliage continues plentiful. A. H., Covent Garden, September 10, 1904.

FRUITS AND VEGETABLES.

GLASGOW, September 14.—The following are the averages of the prices during the past week:—Greengages, 3s. to 5s. per half sieve; Plums, 3s. to 4s. do.; do., English, 3s. to 4s. do.; Gages, 3s. 6d. to 5s. do.; Melons, 2½s. 5s. 6d. to 6s. 6d. per case; do., 3½s. 6s. 6d. to 7s. 6d. do.; Lemons, 8s. to 10s. per case; Grapes, Almeria, 5s. to 15s. per barrel; do., home, 9d. to 1s. per lb.; Apples, American, 12s. to 16s. per barrel; do., English, 8s. to 12s. per cwt.; Bananas, 5s. 6d. to 11s. per bunch; Tomatoes, 4d. to 5d. per lb.; Mushrooms, 10d. to 1s. 2d. do.

LIVERPOOL, September 14.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatoes, per cwt., British Queen 2s. 2d. to 2s. 9d.; Main Crop, 2s. 6d. to 3s. 6d.; Early Regents, 2s. to 2s. 3d.; Conquest, 2s. to 2s. 3d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 3d. to 1s. 6d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Onions, foreign, 4s. per bag; Parsley, 4d. to 6d. per dozen bunches; Cucumbers, 1s. 6d. to 2s. 6d. per dozen; Cauliflowers, 8d. to 2s. do.; Cabbages, 6d. to 9d. do.; Celery, 10d. to 2s. do.; Beans, Kidney, 1s. 1d. to 2s. do. per peck; do., Scarlet Runners, 1s. 6d. to 2s. do. Fruit: Apples, American and Canadian, 12s. to 17s. per barrel for fine lots, 8s. and 10s. 6d. for poorer descrip-

tions; do., Lisbon, 3s. to 5s. per box; Grapes, Almeria, 5s. 6d. to 10s. per barrel; do., Lisbons, 4s. 6d. to 6s., according to weight, &c.; Melons, Valencia, 4s. to 5s. per case for 2½s. and 3s. 6d. to 4s. for 3½s.; Onions: Valencias, 4s. to 4s. 3d. for 4s. and 5s. to 5s. 6d. for 5½s.; do., Oporto, 3s. 6d. to 5s. 6d. per box; Oranges, Naples, fine, 9s. 6d. to 10s. per half case, and 4s. to 6s. for half boxes; Lemons, Palermo, 3s. to 5s. 6d. per case, and 2s. to 3s. per box; do., Naples, 7s. to 11s. do., St. Johns.—Potatoes, 10d. to 1s. per peck; Peas, 1s. do.; Cucumbers, 3d. to 6d. each; Damsons, 2d. per lb.; Filberts, 6d. do.; Grapes, English, 1s. 6d. to 2s. 6d. do.; do., foreign, 6d. to 8d. do.; Pines, foreign, 3s. to 5s. each; Mushrooms, 8d. to 10d. per lb. Birkenhead:—Potatoes, 10d. to 1s. per peck; Cucumbers, 2d. to 3d. each; Filberts, 6d. to 8d. per lb.; Plums, 1½d. to 4d. do.; Apples, 1d. to 2d. do.; Pears, 2d. to 4d. do.; Grapes, English, 1s. to 2s. do.; do., foreign, 3d. to 6d. do.; Tomatoes, English, 3d. to 6d. do.; Damsons, 2d. to 3d. do.; Mushrooms, 6d. to 10d. do.

GARDENING APPOINTMENTS.

MR. GODFREY UPTON, for the last two years and eight months General Foreman at Norton Priory Gardens, near Runcorn, Cheshire, as Gardener to E. DE LA RUE, Esq., Lower Hare Park, Newmarket.
MR. T. W. COWBURN, as Gardener to A. MARC, Esq., Champneys, Tring, Herts.
MR. W. F. OLIVER, for the past six years Gardener and Orchard Grower to Mrs. Grogan, Slaney Park, Baltinaglass, Co. Wicklow, as Gardener to Colonel Cosny, Shadally Hall, Queen's County.
MR. F. J. HAYLER, for the past three years Gardener to G. CAWSTON, Esq., The Manor, Cawston, as Gardener to J. R. HARGREAVES, Esq., Drinkstone Park, Bury St. Edmunds.
MR. A. HAMMOND, for five years Foreman at Norbury Park Gardens, Surrey, and recently Gardener at Hawley Hill, Blackwater, Hants, for L. CURRIE, Esq., Gardener to W. F. PEEL, Esq., at same place.
MR. W. BUCKLE, for several years gardener to D. L. GRIFFITHS, Esq., "Fairfield," Kingsbury, Middlesex, as Gardener to G. B. RENNIE, Esq., Denford Park, Hungerford, Berks.

CATALOGUES RECEIVED.

BULBS, ETC.

J. R. PEARSON & SONS, Chilwell Nurseries, Lowdham, Notts.
TILLEY BROS., 133, London Road, Brighton.
J. MURRAY & SONS, 103, High Street, Deptford, London.
H. CANNELL & SONS, Swanley, Kent.
ED. WEBB & SONS, Wordsley, Stourbridge.
J. CARTER & CO., 237, 238, & 97, High Holborn, London.
KENT & BRYDON, Darlington.
DOBIE & CO., Rothsay, N.B.
W. DRUMMOND & SONS, Ltd., 57 & 58, Dawson Street, Dublin.
BEN. REID & CO., Ltd., 23, Stirling Street, Aberdeen.
RICHARD SMITH & CO., Worcester.
W. SMITH & SONS, 18, Market Street, Aberdeen.
H. N. ELLISON, 3 & 3A, Bull Street, West Bromwich.
DICKSONS, Chester.
EDMONDSON BROS., 10, Dame Street, Dublin.
DICKSON, BROWN & TAIT, Corporation Street, Manchester.
GEO. COOLING & SONS, Bath.
BARR & SONS, 11, 12, & 13, King Street, Covent Garden, London.
CLIBRAN, 10 & 12, Market Street, Manchester.
HOOPER & CO., Central Avenue, Covent Garden, W.C.
DOBIE & MASON, 22, Oak Street, Manchester.
MACK & MILN, Darlington.
JOHN CHARLTON, 35 & 37, The Pantiles, Tunbridge Wells.
OAKENHEAD & CO., 86, Patrick Street, Cork.
ROBT. VEITCH & SON, 51, High Street, Exeter.
THOS. S. WARE, LTD., Feltham.
W. SAMSON & CO., 8 and 10, Portland Street, Kilmarnock.
CALDWELL & SONS, The Nurseries, Kootsford.
JAMES COCKER & SONS, 130, Union Street, Aberdeen.
MILLAR BROS., 20, Market Place, Hull.
BAKER'S, Old Hall Nurseries, Codsall, Staffs.

PLANTS, ETC.

JAMES VEITCH & SONS, Chelsea—Strawberries and New Plants.
WM. CUTBUSH & SONS, Highgate Nurseries, London, N.
Carnations and Pinks.
WM. WATSON & SONS, Clontarf Nurseries, Dublin—Carnations.
V. N. GAUNTLETT & CO., Japanese Nurseries, Redruth—Hardy Plants.

MISCELLANEOUS.

DICKSONS, Chester—Roses.
J. R. PEARSON & SONS, Lowdham, Notts.—Hardy Fruit Trees and Roses.
C. E. WEST, Higham Hill, London, N.E.—Garden Snodries.

COLONIAL.

NIMMO & BLAIR, Dunedin, New Zealand—General Catalogue.

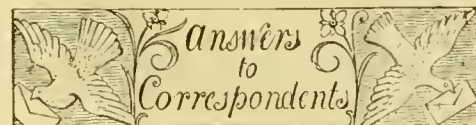
FOREIGN.

LA VICTORINE, Saint-Angustin-du-Var, Nice, France—Palms (wholesale).
J. THORNE, Haarlem, Holland.—Bulbs.
C. SPRENGER, Vomero, Naples, Italy—New Plants.
VILMORIN ANDRIEU ET CIE, 4, Quai de la Mégisserie, Paris—Bulbs.
L. SPATH, Rixdorf, near Berlin—Bulbs.
FRATELLI ROVELLI, Pallanza, Italy—Trees and Shrubs.
L'Etablissement Horticole Briant, Boulevard Saint Cyrien à Poitiers, France—Plants.
HAAE & SCHMIDT, Erfurt, Germany—Seeds of Novel-ties.
J. A. M. DOWELL, Apartado 167, City of Mexico—Bulb-, Orchids, Ferns, &c.

TRADE NOTES.

DISSOLUTION OF PARTNERSHIP.—We are informed that Messrs. Stanley, Ashton & Co., Orchid cultivators, of Southgate, have dissolved partnership by mutual consent, F. W. Ashton retiring from the firm. The business will be carried on however as heretofore by H. Stanley in co-partnership with A. Hassall, and they will discharge all debts due by and collect all assets due to the old partnership. No change in the title of the firm will be made until October 1 next, when it will trade under the style of Stanley & Co. It is to be added that F. W. Ashton will render the new firm the benefits of his lifelong experience in a responsible position.

A WARNING!—Messrs. Cutbush & Sons have drawn our attention to a case in which a man who has applied for nursery situations that have been advertised, and who has given false references. He has also written from various addresses, and after being paid his expenses from a distant locality, has written from an address near to the firm to whom he applied, and who paid the expenses. Fuller particulars may be obtained from Messrs. Cutbush & Sons by anyone in the trade who may be interested.



* * * EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are mis-directed.

AMELOPSIS: Plant. The better plan would be to spread out the roots as far as practicable without injuring them, or removing too much soil from the ball of the plant.

APPLE "RIVAL": Old Reader. Mr. Ross, of Welford Park Gardens, informs us that the variety "Rival" was a seedling raised by himself from the same cross as "The Houblon" and "Charles Ross," viz., Peasgood's Nonsuch x Cox's Orange Pippin. "Rival" was distributed by Messrs. W. Clibran & Son, not by Messrs. Cheal.

BOOKS: W. H. N. We are afraid the work has little momentary value, but you might advertise that it is for sale.

BRITISH GARDENERS' ASSOCIATION: W. H. N. The Association may be able to do something in the way you suggest, but it would be a question for the Committee to consider. In the meantime you should help the Committee to obtain members, and thus make the Association as strong as possible.

DRAWING OF PLANS: W. H. N. Apply to the London County Council for a syllabus of the subjects taught at the evening "continuation" schools. There is sure to be one in your district. Or you could attend the Art classes at South Kensington.

DAHLIA: Urmston. A specimen of the "Twin Dahlia," by no means uncommon, as specimens are sent us every year. It is the result of the fusion of two flowers, a form of fasciation.

ELM TREES: H. R. G. The Elm-bark beetle, Scolytus destructor, one of the most destructive of our bark-boring beetles. You should cut down and burn all the dead and dying

trees, and also prune away all the decayed and sickly branches from the living ones. This treatment would materially lessen the number of insects, and check their spread to the adjacent healthy trees. As a means of prevention Dr. W. Saunders of Canada has recommended a dressing of soft-soap reduced to a consistency of thick paint by the addition of a strong solution of washing soda in water applied to the bark of the stem and main branches. It should be applied during the morning of a warm, dry day, in order that it may dry and thus become more impervious to rain; but it is now too late to apply the mixture, as the beetles have already hatched out and have probably completed laying their eggs.

FERNs: J. P. W. The Ferns appear to have been attacked by thrips. In hot, dry weather insects are especially active. Carnations and other flowers have been infested badly by thrips this summer.

GRAPES: G. F. S. The bunches are both affected with "shanking." Varieties of the Frontignan section are very liable to this disease, which may arise from various causes. Any treatment that may cause a check to the Vines should be carefully avoided, such as over-cropping, excessive defoliation, by injudicious stopping of the shoots, &c., cold draughts in the house, or the roots getting into a cold sub-soil. From your note we imagine the last-named cause has operated in your case. Make a new border outside, as you suggest. Do not interfere with the inside border at the same time. You will need to crop the Vines moderately next season, and allow them to develop plenty of new growth and foliage.

HERBACEOUS PLANTS: A. R. J. The including of Roses in your exhibit would be sufficient to disqualify you. Several other of your flowers, although permissible according to the reading of the schedule you enclosed, could not be so if hardy herbaceous species were required.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—J. H. Plum Overall.—G. B. 1, Belgian Purple; 2, Jefferson's; 3 and 4, too ripe and bruised; 5, Diamond; 6, Coe's Golden Drop.—W. H. Nut "Bizana," a very ornamental variety.—J. W. Miles. Peasgood's Nonsuch.—E. W. G. Magnate.—J. W. 1, Lady Derby; 2, not recognised; 3, Mr. Gladstone; 4, Scarlet Pearmain; 5, Worcester Pearmain; 6, North End Pippin.—G. F. H. 1, Ross Nonpareil; 2, The Queen; 3, Bismarck; 4, Keswick Codlin; 5, Greame's Seedling; 6, Gooseberry Pippin.—B. A. 1, Warner's King; 2, Duchess of Oldenburg; 3, Golden Noble; 4, Kerry Pippin; 5, Cox's Orange Pippin.—W. H. E. 1, Jefferson's; 2, Oullin's Golden; 3, Transparent Gage; 4, Sultan; 5, Kerry Pippin; 6, Lady Derby.—J. M. 1, Lord Derby; 2, Dutch Codlin; 3, Denniston's Superb; 4, Duchess of Oldenburg; 5, Alexander; 6, Scarlet Nonpareil.—G. H. 1, Kerry Pippin; 2, Worcester Pearmain; 3, Cox's Pomona; 4, Duchess of Oldenburg. Pears.—1, Williams' Bon Chrétien; 2, Léon de Laval.—F. McD. 1, Catillac; 2, too small for naming; 3, Forelle; 4, Citron des Carnes.—W. C. Lord Derby.—*Japonica*. A poor sample of Black Hamburg.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—W. B. 1, *Tecoma jasminoides*; 2, *Abelia rupestris*; 3, no flowers, probably *Ailanthus glandulosa*; 4, *Ginkgo Liboba*, the Maidenhair tree; 5, *Trachelium*

coeruleum.—A Reader. Send the varieties of *Pelargonium* to a nurseryman who grows a collection of them.—P. M. We do not undertake to name varieties of florists' flowers.—C. H. *Dactylis glomerata variegata*.—C. J. H. *Antennaria dioica var. tomentosa*; 2, *Helichrysum lanatum*.—J. C. T. 1, *Iochroma lanceolata*; 2, *Impatiens Mariana*; 3, *Clematis*.—J. C. & Co. *Gypsophila acutifolia*.—K. Y. 1, *Polygonum compactum*, rose-coloured variety; 2, *Veronica longifolia var.*—O'S. Apparently *Salix caprea*, the Goat Willow.—W. H. H. *Rodriguezia pubescens*, often called *Burlingtonia* in gardens. The sepal is not absent, but the two lower ones are joined so as to form a resemblance to a spur. The feature is common in members of this genus.—Lochness. The berries are those of *Vaccinium Vitis-Idaea*; the other specimen is *Bupleurum rotundifolium*.—*Arboretum*. *Fraxinus excelsior* variety *heterophylla lacinata*, and *Diervilla sessilifolia* variety *splendens*.—Bucks. *Juniperus virginiana*.—E. G. F. *Abies nobilis*.—J. C. & S. *Gypsophila acutifolia*.—C. H. H. *Konigia maritima*.—E. C. *Oxalis Bowiei*.—G. S. 1, *Oxalis Ortgiesii*; 2, probably *Swertia perennis*; send better specimen.—E. A. D. 1, *Cœlogyne cristata*; 2, *Cyrtanthus sanguineus*; 3, *Cattleya intermedia*; 4, *Codiaeum angustifolium maculatum*; 5, *Caladium nargyrites*; 6, *Oncidium excavatum*.—A. B. Z. 1, *Odontoglossum Wallisii*; 2, *Odontoglossum Lindleyanum*; 3, *Oncidium saltabundum*; 4, *Stelis Rodriguezii*.—Anxious. 1, *Polypodium aureum*; 2, *Begonia Louise Closson*; 3, *Begonia discolor* variety; *Begonia incarnata*; 5, *Polystichum angulare proliferum*; 6, *Asplenium bulbiferum*; 7, *Codiaeum angustifolium maculatum*; 8, *Rhus Cotinus*; 9, *Colutea arborescens*.—A. T., *Nun-eaton*. *Hamanthus Katherina*.—E. H. 1, *Fittonia argyoneura*; 3, *Convolvulus mauritanicus*; 3, *Epiphyllum truncatum*; 4, *Rudbeckia speciosa*; 5, *Sedum Rhodiola*; 6, *Bocconia cordata*.

PEACH TREE WITH FUNGUS: J. P. W. The hard woody *Polyporus* found on Peach is called *Fomes fomentarius*. It can do no further harm, and only occurs on naked wounds on growing trees. If left to develop its spores, these may be dispersed and settle on wounds on other trees.

PELARGONIUM LEAVES: Enquirer. We cannot express an opinion unless you send specimens for inspection.

POND: L. H. You will do no good with the pond until it has been cleaned out, the bottom concreted, and the sides or margins bricked up to the water-level. Any local builder will furnish you with an estimate of the cost. A depth of 2½ feet of water will be enough. When this has been done the Lilies may be planted in shallow, roughly made baskets, using loamy soil freely mixed with cowdung. Place them on the floor of the pond, and then let the water in. A continuous inflow of fresh water is not absolutely necessary, but it will be all the better if such could be arranged. If in course of time pond-weeds do make their appearance, the bottom being concreted will facilitate their removal, and during this operation the Lilies will take no harm by being lifted out of the way. This should be done in early autumn, whilst the plants are becoming dormant. If the expense of concreting and bricking is more than you care to meet, then let the pond be drained and filled up with soil, on which many pretty species of plants may be cultivated. Round the marshy sides of the pond such species as the following may be planted, viz., *Butomus umbellatus*, *Caltha palustris*, *Drosera*, *Epilobium hirsutum*, *Gunnera scabra*, *Iris graminea*, *Narcissus*, *Orchis*, *Phormium tenax*, *Sagittaria*, &c.

POTATO: M. Chart. The parentage of the variety Sir John Llewelyn Potato has not been disclosed, so far as we know, but it is generally believed to have had Snowdrop Kidney as one of its parents. That it is of bona-fide seedling origin there can be no doubt. Such distinctive varieties are not the product of "selection" or sport, for neither of those have produced a specially meritorious Potato.

POTATO SEEDLING: E. B. The variety you describe as having been raised from seeds sown in January, and which is now 6 feet high, with haulm 2½ inches in circumference, certainly possesses considerable vigour. You will soon be able to examine the tubers and estimate their value.

ROSE BRAND: J. S. & S. The fungus on the under surface of Rose-leaves is *Phragmidium subcorticium* (see *Gardeners' Chronicle*, July 17, 1886, p. 76, with figs.). Spray with Potassium sulphide, and burn all infected fallen leaves. It is too late to do much good now, but spray in the spring as soon as the leaves open, to check its recurrence.

ROSES FOR MASSING IN BEDS: G. H. You might plant the variety Mrs. W. J. Grant for massing, but in some districts the plants do not succeed well. Instead of the remaining varieties mentioned in your letter, you had better plant Mrs. John Laing, Madame Lambert, Mrs. Sharman-Crawford or Baroness Rothschild, Duke of Edinburgh, Ulrich Brunner, Prince Camille de Rohan, or Abel Carrière.

SAINTPAULIA IONANTHA: W. H. N. You should remove the plant indoors at once; and, although a native of tropical Africa, you may succeed in cultivating it in a greenhouse, providing you have means of heating this a little during winter. You may easily raise plants from seeds, and if these are sown in heat at the latter end of February they will flower towards the end of summer.

TOMATOS: A. C. Horton. Tomato plants should be afforded all the sunlight possible, and the position you describe is a most unsuitable one for their cultivation. Your employer seems to think that the culture afforded Melons and Cucumbers would succeed in the case of Tomatos! The single stem or cordon system of training has generally proved to be advantageous and conducive to heavy crops, and we would certainly not advise you to "stop" the leading growth each time it produces flowers. This would entail a needless waste of time, and the lateral growths would not be so strong as the main growths would have become. The small fruits you sent were absolutely seedless.

VINES: Enquirer. You fail to give any information in regard to the amount of fire-heat employed. If a dead horse has been buried in the border, there is no further explanation of the rank growth required. You had better examine the border and ascertain if the drainage is good. If both appear to be in moderately good condition, then during the winter you might take off as much of the surface-soil as can be removed without causing severe injury to the roots, and apply a top-dressing of fibrous loam, bone-meal, and mortar-rubble. This will encourage the Vines to make fibrous roots near to the surface, where they are most desirable. Do your best by ventilating the house freely, and by employing a moderate amount of fire-heat, to induce this year's wood to ripen perfectly. If there is room for the canes to extend let them do so, and do not prune them quite so severely as formerly. If, as you expect, the roots are more than 4 feet deep, your best plan will be to lift the Vines and replant.

COMMUNICATIONS RECEIVED.—V. N. G. & Co. (with thanks).—D. F.—H. H. Parker, California (your letter has been forwarded).—J. B. R.—D. D., Bournemouth.—W. P. B.—R. F. Roemer, Quedlinburg (next week).—E. M. R.—P. B.—C. H.—T. C.—J. T.—M. A.—G. W.—Field Bros. (next week).—G. B. M.—J. G. D.—R. A. Rolfe.—J. Gregory.—Cymra, Welsipool.—Editor, *S. E. Gazette*.—H. F. N.—R. J. P. & Sons.—M. C.—J. G.—S. J.—A. M.—R. D.—C. H.—E.—T. W.—W. D.—J. B.—W. R.—C. H.—F. W. S.—R. H.—J. W.—J. A.—S. H. G.—J. A. S.—F. M. B.—B. R.—F. V. Theobald.—W. A. C.—J. O'B.—J. C.—R. W. D.—C. Sprenger.—W. H. C.—W. H.—W. H. S.—H. N.—G. Monro.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

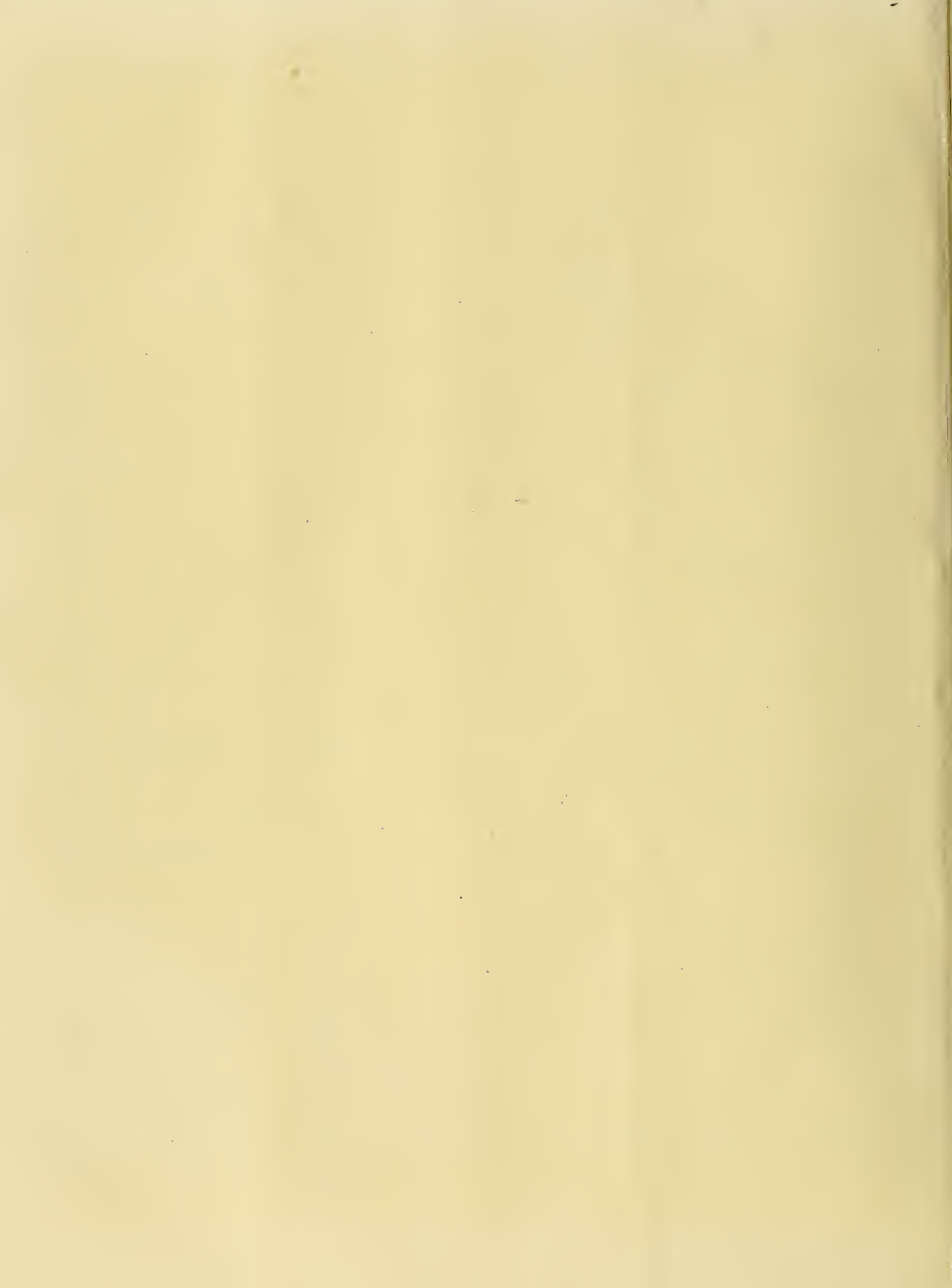
IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, more than

TREBLED.



PAVIA INDICA, IN BARTON HALL GARDENS, BURY ST. EDMUNDS.

[Photographed by Mr. G. S. Cousins.]





THE Gardeners' Chronicle

No. 926.—SATURDAY, Sept. 24, 1904.

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GRAFT HYBRIDS.

(SEE FIGS. 84 TO 88.)

YEARS ago the possibility of effecting a cross or intermixture of characters by means of grafting was not admitted by the generality of gardeners. It is true that in most instances of grafting little or no structural change is visible. The stock apparently goes on in its way, the scion follows its own course. The exceptions are so few that it has been accepted almost as a dogma that the stock does not affect the scion, nor the scion the stock. But although we are unable to see the change by our unassisted vision, it by no means follows that no change takes place. The exceptions, few though they are, are increasing in number to such an extent that it is fair to assume that changes do take place, even though our coarser perceptions may not reveal them to us. Besides, what do we graft for if not to secure some change that is advantageous to us?

This is one of those numerous questions which cannot be settled except by prolonged experiment and observation. The most brilliant experimenter in this field of late years is Professor Daniel, of Rennes, to whose extraordinary experiments we have from time to time alluded. In the various

forms of lopping, pruning, cutting back, and the like, the balance between the absorption by the roots and the food-forming work of the leaves is forcibly disturbed. A frequent consequence is the production of a number of shoots, manifesting increased vigour and often change of form. One such instance in

formed leaves of its kind, the scion leaves proper to a Pear, but in addition there were formed from the point of union (*bourrelet*) leaves of an intermediate character; partly appertaining to the Quince, partly to the Pear. A comparative examination of the microscopical anatomy of the leaves re-

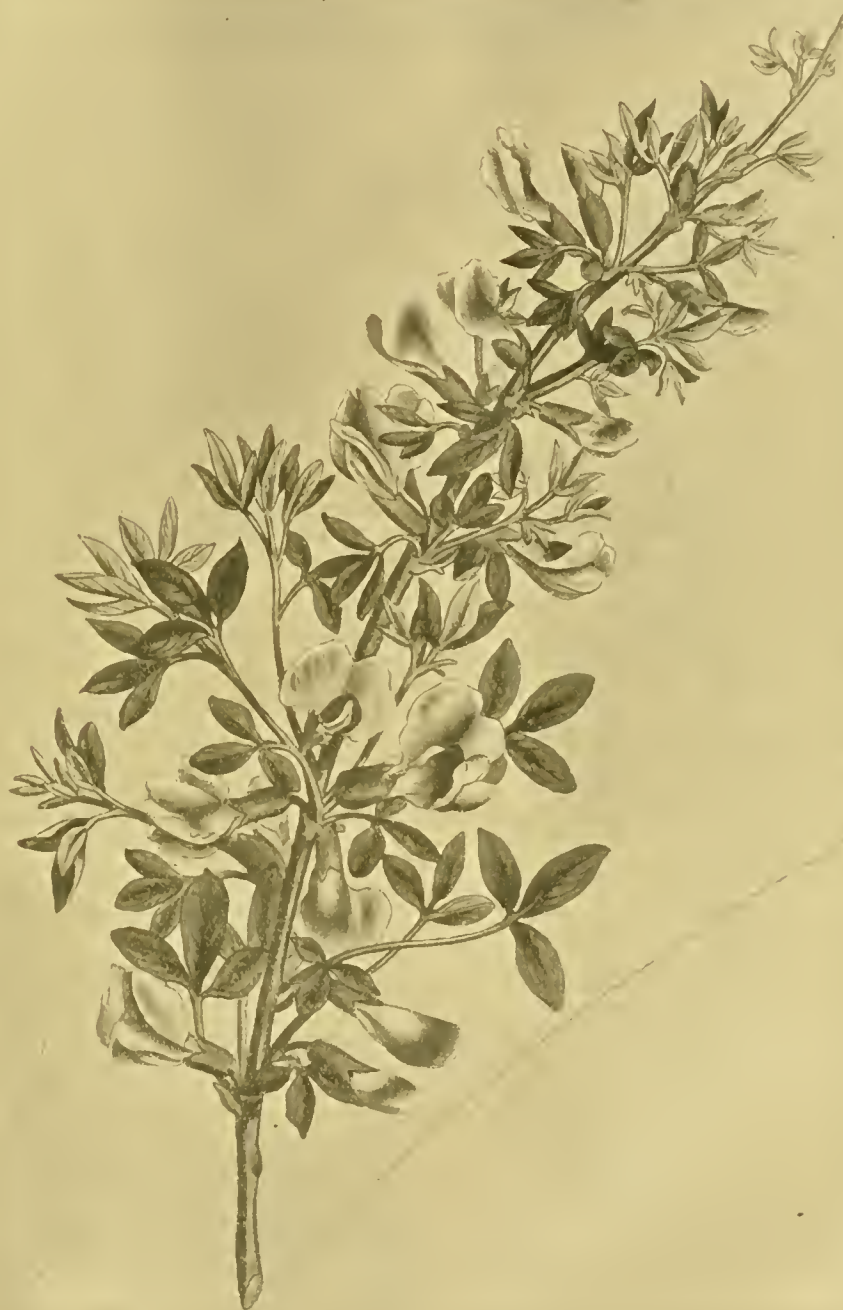


FIG. 84.—FLOWERING SPRAY OF CYTISUS PURPUREUS.

a Pear-tree has lately been made the subject of investigation by Professor Daniel. The Pear in question had been headed back, and it produced from the stock shoots with leaves like those of the Quince, whilst three others, from the point of union of stock and scion, formed leaves intermediate in their characters between those of the Quince and those of the Pear. In this case the stock

vealed variations in minute structure analogous to those seen by the naked eye. Internal structure therefore, as well as external conformation, showed that the new shoots were examples of graft hybridisation.

The classical examples of graft hybridisation hitherto have been the Medlar of Bronvaux, and the Adam's Laburnum, to which reference has frequently been made

in these columns. To these we must now add the numerous cases observed by M. Daniel.*

The history of the Adam's Laburnum, originally raised in 1826, is well known, and is cited in most of the more important text-books. Nevertheless the changes are so extraordinary that it is not wonderful that we should receive numerous specimens and enquiries about it every year.

At fig. 85 is shown a flower raceme of the ordinary Laburnum with yellow flowers; a leaf is also shown in fig. 87. *Cytisus pur-*



FIG. 85.—FLOWERS OF COMMON LABURNUM.

pureus is illustrated in fig. 84, copied from the *Botanical Magazine*. Its habit, foliage, and lilac flowers are widely different from those of the Laburnum. Now, when the French gardener Adam budded the *C. purpureus* on to the Laburnum, the result was the production, after a time, of branches on the same tree, some bearing foliage and flowers of the Laburnum, others those of *Cytisus purpureus*, and yet others showing every intermediate stage between the two.

* Daniel, "Théorie des capacités fonctionnelles variations spécifiques dans le greffage, Congrès de Lyon, November 1901."—*Revue Générale de Botanique*, t. xvi. 1904, p. 5.

Our illustration at fig. 86 shows a tree of this kind, about 20 feet in height, in the nursery of Messrs. Pennick & Co., near Dublin; and by the aid of a magnifying glass these intermediate forms can be seen intermixed with the normal racemes of the Laburnum and of *C. purpureus*. The tree was described in our columns by Mr. Dillwyn in 1841 and 1842, and full references to this and other graft-hybrids are made in Braun's *Rejuvenescence* (Ray Society, 1853); Morren, *Belgique Horticole*, 1871; Masters in *Popular Science Review*, April, 1871; Sturtevant in *Transactions of the Massachusetts Horticultural Society*, 1881; and Darwin, *Variations of Animals and Plants*, ed. 2, vol. i. (1875), p. 413.

The practical side of the graft hybridisation question is one of enormous importance, especially in the Wine-growing districts. When the Phylloxera bid fair to effect the ruin of the vineyards, various methods were adopted to check or counteract the evil. The most successful means up to this point has been the grafting of the Vine on to some American stocks, the roots of which are more or less resistant to the evil influence of the Vine louse. There can be no question of the advantages that have accrued from this practice.

In conformity with the general opinion as to the want of influence of the stock on the scion, it has been asserted that the quality of the wine yielded by the grafted vines is not impaired, that the wine made from the grafted vines is as good in quality as that from the vines grown on their own roots.

Professor Daniel combats this view, and in a remarkable article on the "Reconstitution du Vignoble Français," in the *Revue de Viticulture*, shows that changes do take place as a consequence of grafting,



FIG. 87.—TO THE LEFT, LEAF OF LABURNUM; TO THE RIGHT, LEAF OF CYTISUS PURPUREUS.



FIG. 86.—TREE OF CYTISUS ADAMI [GRAFT HYBRID] IN THE NURSERY OF MESSRS. PENNICK AND CO.

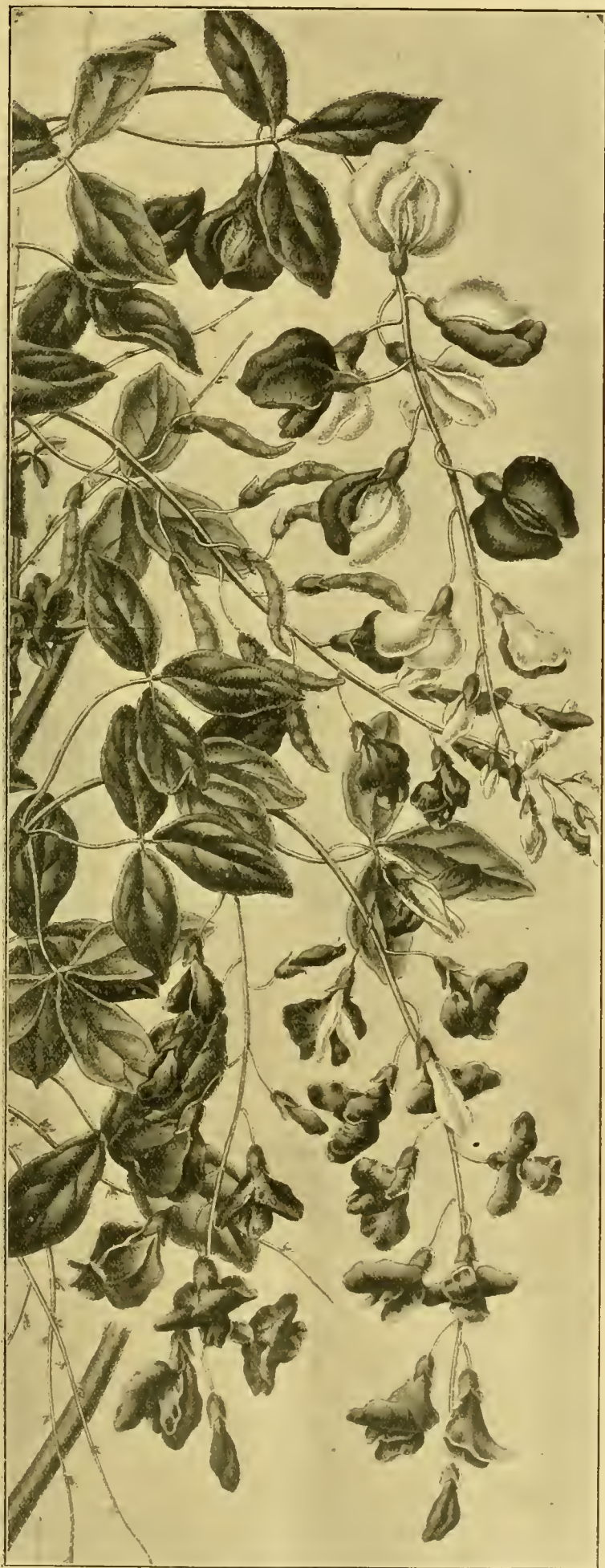


FIG. 88.—FLOWERING SPRAYS OF CYTISUS ADAMI (GRAFT HYBRID).

and that if these be admitted, a great deal more investigation is required to ensure a proper selection of the stocks so as to avoid any deterioration of the Vines. We cannot enter into details the validity of which is open to discussion, but we may add that M. Daniel advocates the practice of hybridisation and selection by means of which it may be possible in the future to secure Vines on their own roots which shall be resistant to the attacks of the Phylloxera, and which shall produce the highest quality of wine without the risk of contamination consequent on grafting.

Grafting, as has been stated, disturbs the equilibrium of growth, and may therefore be injurious. The culture of the Vine on its own roots is, according to M. Daniel, the only method of conserving the normal balance of growth indispensable to the maintenance of the health of the Vine and the excellence of its produce. Resistant stocks (ungrafted) have yet to be created. Meanwhile every means must be taken to combat the Phylloxera by the use of insecticides and similar measures. Whether M. Daniel's conclusions be accepted or no, whether he and others can succeed in finding or creating a Vine so resistant to the Phylloxera that grafting will be no longer necessary, are questions which will require years of experiment for their solution. Till some definite conclusion is arrived at the French growers will probably and rightly continue to avail themselves of the American stocks.

Enough has been said to show how phenomena regarded by practical men as merely curious and not worthy their attention from an economic point of view, are in reality of the very greatest practical importance, and deserving all the study that physiologists and cultivators alike can bestow on them.

FRUIT REGISTER.

PEAR BEURRÉ D'AMANLIS.

This is a grand autumn Pear. The fruits are large and handsome in appearance, and of delicious flavour when ripe, from the end of September to the middle of October. It is a prodigious cropper. Budded on the Quince stock and treated as pyramids, young trees two years old from the bud generally produce a fair crop of fruit the first year after planting—a point that should not be lost sight of by intending planters when ordering their trees from the nurseries.

BEURRÉ D'AREMBERG

is another excellent free-fruited Pear. The tree is of more compact and short-jointed growth than B. d'Amanlis, and the fruit is shorter from stem to crown, and more russety in appearance than those of that variety. The flavour is excellent when the fruits are ripe in December. The variety provides a good succession to Marie Louise, which is another Pear that succeeds well when trained as a pyramid.

PITMASTON DUCHESS.

What a beautiful effect has a row of pyramidal-trained trees of Pears and Apples when in flower or laden with ripe fruit growing on either side of walks in the kitchen and fruit-gardens! And in this respect the Pitmaston Duchess has few, if any, equals, the extra large and handsome fruits, which are produced with great freedom, being very effective, and rich in flavour. The tree, too, is not only a great bearer (when worked on the Quince stock), but is also a free grower. H. W. Ward, September 16.

FLOWER-GARDENING AT THE ZOOLOGICAL GARDENS.

ON several previous occasions we have remarked upon the excellence of the flower-gardening practised every year in the Zoological Society's Gardens at Regent's Park. The present season has been no exception, but, on the contrary, the character of the weather having been unusually propitious, the general effect of the beds and borders has been more grierous than ever. The admirable manner in which the houses containing the beasts, birds, and reptiles are distributed over the gardens, allows of the space around them being made decorative. So well have these opportunities been improved upon by Mr. J. Young, who has been charged with the care of the horticultural aspects of the gardens for nearly twenty-five years, that we can quite understand that many of the visitors are attracted as much by the floral features as by the zoological specimens.

The dominating feature of Mr. Young's flower-beds are the magnificent *Celosias*. They brighten almost every portion of the gardens, either as groups in beds by themselves or mixed with other species of plants in beds of larger size. During the present season these plants have thriven wondrously well, and the excellence of the strain has been remarkable. Mr. Young has for many years propagated his *Celosias* from seeds he has selected from his own plants, and the show this year illustrates with what rigid care he has selected them. The plants have magnificent plumes, and in addition they have fermed branches below the centre plume, each of which has developed a feathery plume similar to the central one, except that it is smaller in size. As most gardeners are probably aware, the mere decorative a plant of *Celosia* is, the fewer seeds does it develop, therefore a perfect plant from the decorative point of view would produce no seeds at all. It is to this circumstance, probably, that we must attribute the inferior strains of *Celosias* frequently met with in private gardens, cultivated in pots for the furnishing of the conservatory. If a greater number of gardeners saw Mr. Young's plants, we feel sure however that they would introduce *Celosias* into their own flower-beds. In the southern counties, at any rate, there need be no doubt about their succeeding well, provided the plants are raised sufficiently early to become almost fully grown before they are planted in the beds in the middle of the month of June. Where the plants have failed it has probably been due to their having been removed to the open when too small in size, for in such a case they fail to develop perfectly. If a position can be made available for them where they will be exposed to full sunshine, but receive protection from strong winds, so much the better. The varieties afford colour of the richest crimson, also bright rosy-red, and many shades of yellow and orange-colour.

Among other plants Stecks have succeeded specially well this season; also Cannas, which appear very handsome grouped in large beds. It has been found that some varieties are much freer in flowering in the open-air than others, and the varieties Queen Charlotte (red and yellow) and Alphonse Bouvier (rich crimson) are two of these.

The border, 350 feet in length, near to the main entrance has appeared very bright with a great variety of flowering and ornamental foliage plants; and near by a border of flowers underneath a shrubbery imparts such a bright edging to the shrubs that it cannot fail to be admired. The geometrical flower-beds in front of the monkey-house are as ornate as usual, and rather less tall-growing "dot" plants have been employed, in order that the diamond-shaped beds may be seen from one end to the other.

There is another series of flower-beds near to the bears' den, and in addition a flower garden containing a large number of beds of various sizes, arranged informally. In some of the larger ones there are Agaves, *Ficus elastica*, Bamboos, Eucalyptus, specimen plants of *Heliotrope*, &c., intermixed with each other after the manner so well illustrated in the gardens at Hampton Court.

Since our last visit a very fine aviary has been built, and many other improvements have been made and are contemplated in the establishing of birds and animals in more natural surroundings. These alterations necessitate more or less replanting, and Mr. Young may be trusted to do this work in the best manner possible.

ORCHID NOTES AND CLEANINGS.

ABNORMAL CYPRIPEDIUM.

A SINGULAR and rather pretty flower of *Cypripedium* *Leeanum* × *Spicerianum* with abnormal arrangement of the parts has been sent us by Mr. W. P. Bound, gr. to Jeremiah Colman, Esq., Gatton Park, Reigate. The upper sepal is divided and joined to the lower sepals, which are also divided, and the two wings thus formed take the position of the petals, one on each side. The upper sepal portions preserve their colour—white, spotted with purple; and the lower sepals are of the usual pale-green tint. Only one petal appears, and that is in the position of the dorsal sepal. The labellum is twisted and slightly compressed, and the staminode imperfect. Notwithstanding the quaint arrangement of the flower, there is a regularity about the mis-arrangement of the parts which makes the flower attractive.

CYPRIPEDIUM × BURBAGENSE.

A fine flower of this uncommon hybrid between *C. insigne* *Chantinii* and *C. × selligerum* *rubrum* has been sent us by Eustace F. Clark, Esq., Chamenix, Teignmouth, who states that his plant came from Mr. Chas. Winn's collection at Selly Hill, Birmingham. The original plant flowered with Capt. C. C. Hurst, Burbage, Hinckley. The flower is of good proportions, embodying the attractive features of both parents. The large upper sepal is white, with a green base and dotted lines of purple; the decurved petals are over 3 inches wide, and of a rose-purple colour with dark spotting on the whitish base. Lip rose-purple; staminode large, yellow with purple hairs. The lower sepals are whitish with green lines, and as they exceed the size of the labellum they afford an effective feature.

MARKET GARDENING NOTES.

TOMATO "COMET" (SELECTED).

THIS is a first-class Tomato for both indoor and field culture; it is a strong grower and free bearer, producing under favourable conditions large clusters of clean, medium sized fruits of fine colour and good flavour. Several of the clusters with which the field plants are laden consist of from twelve to sixteen fruits each. The present has been an ideal season for field Tomatoes, the plants being perfectly clean, healthy, vigorous, and productive. All lateral growths are removed, and the leaves shortened to within one pair of leaflets, in order to expose the fruits to the full influence of the sun's rays. The plants should be examined every day, and all fruits that are beginning to "colour" should be picked and carefully graded in peck baskets for market. The baskets should be lined with tissue-paper, leaving the latter sufficiently long to turn down over the fruit, and secured with two cross-ties of raffia. An address label attached to each peck basket should indicate the grading by the words "first," "second," or "third," as the case may be. *H. W. Ward.*

SCOTLAND.

ABERDEEN AND NORTH OF SCOTLAND COLLEGE OF AGRICULTURE.

THE establishment of this college is now an accomplished fact. Governors, teaching staff, secretary—all have been appointed, and the first session, 1904-5, will open on October 11, and will be continued until March 15.

The main object, according to the scheme of constitution, is the development in the North of Scotland of Education and Research in Agriculture, Forestry and allied subjects, and from the prospectus just issued profitable results in these directions seem assured. Students are advised to follow a course of instruction which will enable them to gain the degree of Bachelor of Science in Agriculture, the University Diploma in Agriculture, or the National Diploma in Agriculture, which are open to the students attending the college classes. Full information is given regarding the subjects necessary for qualifying for one or other of these honours. While it is pointed out that candidates for the degree of B.Sc. (Agriculture) must, in the course of not less than three Academical years, attend at least twelve courses of instruction (of which six full courses must be taken in the University of Aberdeen), the Diploma in Agriculture, on the other hand, may be obtained by students attending the prescribed course of study extending over only two winter sessions, this course being specially adapted for young farmers and farmers' sons who may find it inconvenient to attend in the summer. In each case, of course, a preliminary examination is necessary, and no student can offer himself for the degree or diploma examination until the preliminary examination has been completed.

A Lecturer in Forestry is to be appointed to provide instruction in forestry in connection with the agricultural curriculum of the college, and to organise short courses of instruction for working foresters, who cannot spare the time for a longer course. A forest-garden or demonstration area will be provided in connection with the Forestry department of the college, and will contain specimens of forest-trees and demonstration plots, showing methods of propagating, planting, and cropping.

It is also mentioned that the following experiments are being carried out, the results of which will be laid before the Governors in due course:—On the manuring of Turnips and analyses of soils at nineteen centres in the counties of Aberdeen, Banff, Kincardine, and Ross and Cromarty; on the comparative merits of varieties of Turnips at seven centres in Aberdeenshire and Banffshire; on the comparative merits of disease-resisting varieties of Turnips at thirteen centres in Aberdeenshire and Morayshire; on the manuring of grassland at seventeen centres in Aberdeenshire; on the comparative merits of twenty-four varieties of Oats and Barley at two centres in Ross-shire; on the comparative merits of eight varieties of Oats at thirteen centres in Aberdeenshire and Morayshire; on the spraying of Charlock and Potatoes at centres in Aberdeenshire and Kincardineshire; on the residual value of various artificial manures at three centres in Aberdeenshire and Kincardineshire; on the effects on the Turnip crop of early and late applications of phosphatic manures at two centres in Aberdeenshire; on the life-history of the Turnip-fly, and methods of prevention and remedy, at fifteen centres in Aberdeenshire, Morayshire, and Ross-shire; on the cultivation of Sugar-Beet at two centres in Aberdeenshire and Morayshire.

Another interesting item to note in the prospectus is that relating to what is termed the Advisory Department. It has been arranged that those residing within the counties contributing

to the college shall be entitled to receive advice and assistance from members of the college staff on the following points free of charge:—

1. Tillage of soils, cultivation and manuring of crops, removal of weeds, prevention and treatment of plant diseases, &c.

2. When desired members of the staff will be prepared to visit farms to examine into and report upon failure of crops, disease in crops, and deterioration of pastures.

3. Samples of agricultural seeds will be examined and tested, and a report will be made on the percentage of purity, the nature of the impurities, and the percentage of germination.

4. *Identification of Plants.*—Plants will be identified and reported on as to their habits and their agricultural value.

5. *Insect Pests.*—Specimens of insects infesting crops, fruit trees, &c., may be sent to the College for identification, and reports will be given as to the best means of prevention and extermination.

NURSERY NOTES.

A NEW ESTABLISHMENT.

IN the quiet little village of Codsall, about 4 miles north-west of Wolverhampton, there has been established during the past two years a nursery that promises to become one of the most important in the Midland district. Having had occasion to go to Wolverhampton in the middle of August, we took the opportunity to visit Codsall in order to see how far the work of making this nursery had proceeded. It may be said at once that the scene we witnessed there occasioned us considerable surprise, for it is rather less than two years since the work was commenced. Of the 90 acres of meadow-land then acquired 45 acres are now under nursery crops. An imposing entrance has been made, and a first-rate wide path or drive, from which other and smaller paths run at right angles. The borders on either side of the main walk are

commonly well. All of them were securely and neatly supported by stakes.

The soil consists of good loam overlying clay, and varies considerably in texture in different parts. Roses appear to thrive well, and the plants have made excellent growth during the present season. We were informed by Mr. T. G. Baker that 30,000 stocks were budded with Roses in 1903, and that 60,000 have been budded this year.

One hundred varieties of Potatoes have been cultivated during the season. There is at present a glorious show of early-flowering varieties of Chrysanthemums, the collection consisting of 12,000 plants, representing 200 varieties. It is intended to make the nursery a general one, and in addition to the plants already named, a collection of trees and shrubs will be grown, a beginning having already been made with fruit-trees.

Messrs. Baker have a florist's business in Lichfield Street, Wolverhampton, and many large glass-houses at the nursery are devoted to the purpose of growing Pelargoniums, Ferns, and other plants, also Tomatos for sale at that establishment. But the primary business of the firm will be that of nurserymen and seedsmen, and a commencement has been made in such a thorough manner it must have occasioned a very large outlay of capital. The appearance of this new nursery, and the promise it holds out for the future are matters upon which we may congratulate Mr. T. G. Baker, his two sons, and the excellent manager, Mr. Kerr. We wish for this firm a successful career.

FLORISTS' FLOWERS.

FUCHSIAS WITH WHITE COROLLAS.

PROBABLY but few persons who attended the meeting of the Royal Horticultural Society on July 23 noticed in the foreground of a collection of hardy flowers set up by Mr. Amos Perry, of Winchmore Hill, a few plants of a small-flowered Fuchsia in pots, bearing the name of Mme. Cornellisen, and having white corollas. This was probably the first Fuchsia with a white corolla and red tube and sepals raised on the Continent; and it is interesting to note that, notwithstanding the flood of new Fuchsias put into commerce during the last forty years, this variety should have been preserved, to re-appear on the above date. Madame Cornellisen was distributed by Messrs. Thibaut et Keteleer, florists, of Paris. Mr. F. W. Burbidge puts the year of sending-out as 1860, but there is reason to believe an earlier date should be named, as it would appear recollection points to its having been in cultivation a few years earlier; and there are those who believe it to have been the first Fuchsia with a white corolla seen in this country.

If it be correct that, as Mr. Burbidge states, Madame Cornellisen was not distributed until 1860, then the honour of raising the first Fuchsia having a white corolla belongs to Mr. W. H. Story, who in 1853-54 produced the variety Queen Victoria, having a scarlet tube and sepals, and a pure white corolla, which, with other varieties, passed into the hands of Messrs. E. G. Henderson & Sons, then of the Wellington Road Nursery, St. John's Wood, for distribution. The advent of this interesting novelty naturally aroused a great deal of interest, but at the time Mr. Story was afflicted with a severe illness which resulted in death, and he was thus unable to afford any information as to the parentage of "Queen Victoria"; but it was believed that Mr. Story obtained pollen through Mr. Veitch, of the Exeter Nurseries, from a species or variety with a small and almost white corolla, and by using this on, it was said, a dark variety, there was ultimately produced the batch of which the variety Queen Victoria was



FIG. 89.—CRAMBE ORIENTALIS AS GROWN IN THE ROYAL GARDENS, KEW.

CRAMBE ORIENTALIS.

A NATIVE of Asia Minor and Persia, this fine and distinct species is rarely seen in gardens, although it has been known for nearly a century. It is one of the most distinct plants for cultivating in a large bed or for grouping in the herbaceous border. It is perfectly hardy, grows freely, and never fails to produce a profusion of flowers each year in June and July. The flowers are pure white, about three-quarters of an inch in diameter, and possess a sweet, honey-like fragrance, which attracts large numbers of bees. They are borne in large terminal panicle racemes, which rise to a height of 4 to 5 feet, and branch freely from near the base upwards. The foliage is bold and handsome, 2 to 3 feet long and about a foot broad, ovate, pinnatifid, and coarsely serrate. After the flowering period is over, the inflorescences die down, and young shoots are developed from the base, which furnish the flowering growths in the following season. The plants thrive in a rich, porous compost, and should be fed liberally during the growing season.

About seven species of the genus *Crambe* are in cultivation, all of which are natives of Europe or the Orient, the common Seakale, *C. maritima*, being best known.

The accompanying illustration (fig. 89) was prepared from a photograph (taken in June) of a bed near the Palm-house in the Royal Gardens, Kew. Chas. P. Raffill.

planted with a selection of choice shrubs and flowering plants, the whole making a very attractive feature.

In one corner of the nursery a substantial cottage has been built for the nursery manager; and in another situation a large seed warehouse and packing sheds, &c., have been erected. All the buildings have been put up for to last a very long time, and are distinctly different from the more cheaply built structures often seen in commercial establishments. An excellent water supply has been provided over the whole area by erecting a pumping-station and pumping the water from a stream into an elevated tank, from which there is a sufficient "fall" to any part of the nursery.

The process of making extensive collections of plants has been carried forward very rapidly, and when inspecting the hardy herbaceous perennial plants, we were impressed by the large batches of the different species that were to be seen in the neatly-formed beds, all of which were unusually free from weeds. An extraordinary batch of *Incarvillea Delavayi* was observed, and the plants had made exceedingly robust growth. Dahlias are apparently a speciality at this nursery, for there were upwards of 4,000 plants grown for stock purposes and for supplying flowers for exhibition. These plants were put out at distances of 5 feet from each other each way, and were growing and flowering un-

one. The last-named was put into commerce about 1856-57.

Among our modern Fuchsias there are very few single varieties which are white. Messrs. H. Cannell & Son, of Swanley, whose list is a comprehensive one, name but three. The early forms were spare of bloom, and it is probable that defect is somewhat hereditary. But of white double varieties there are several, and they are generally free-blooming; one named Ballet Girl is largely grown by Mr. Geo. Reynolds at Gunnersbury Park in the form of big bush specimens in pots for the decoration of the terrace in front of the mansion. This variety is very free, and one of the best of the group. Occasionally one of this class is shown as an exhibition specimen, but a single white variety rarely, if ever.

Mr. Perry strongly recommended Madame Cornellisen as a bedding plant; small plants appear to bloom freely, the flowers are small, but they are graceful in form, while the habit of growth as shown by small plants is desirable. It affords another instance of an old plant coming to the fore in after years, when there was reason to believe it had been lost. *R. D.*

FOREIGN CORRESPONDENCE.

IRIS SAARI, SCHOTT, AND I. BISMARKIANA, REGEL.

SEEING the interesting notes about Iris Saari in the *Gardeners' Chronicle*, August 27, 1904, I beg to offer the following observations about this species, and about I. Bismarkiana, Regel, with which it is often confounded.

I have received I. Saari true, but many plants that come under this name prove to be misnamed. I. Saari, I think, is a true native of Asia Minor, growing in very different positions, and therefore very variable. But as not only botanists study and name species of plants, but also gardeners, and perhaps also some limestone-burner of Jaffa, or some German schoolmaster living amongst the Turks, one cannot wonder that there arises great confusion. The true I. Saari does not grow in a wild state in Palestine; I received it exclusively from Asia Minor, and what I saw in gardens previously were distinctly untrue. The flower illustrated on p. 147 was the true I. Saari. It is always dwarf, and its habit quite different from all Palestine Irises. Its foliage is like that of I. iberica, and its flowers are very irregular and much smaller than those of I. Bismarkiana. I received a large importation of the true I. Saari lurida, Baker, from Amasia, collected many years ago by the late Mr. Mühlendorff, who collected there the fine Tulipa Sprengerii, Bak., and many other fine bulbous plants. I never named it lurida, but Professor Boissier did, and Professor Baker published it first in the *Botanical Magazine*, t. 6960. Professor Baker describes also as a native of Palestine, but that must certainly be an error, as I have never received it from there. I have found none of all *Oncocyclus* Irises so variable as I. Saari, which I repeat is a dwarf-growing species, and not a tall one, as is I. Bismarkiana. All *Oncocyclus* species from Palestine are most difficult to cultivate, whilst the I. Saari may be easily flowered and acclimatised.

I. Bismarkiana was imported from Palestine, where it is now probably non-existent, owing to unscrupulous collectors. It was named Bismarkiana on my own proposal by the late Professor Dr. E. Regel, and perhaps Professor Baker did not know this when he published his splendid *Handbook of the Iridæ* in 1892. I did not know that Sir Michael Foster had this fine species previously from Palestine, and had named it provisionally Iris Saari Nazarena, otherwise I should not have sent it to Dr. Regel. But Regel saw it himself in my garden. Much later some gar-

dener of Naples received it, also from my former collector of Palestine, and gave it away with the provisional name I. Saari Nazarena, hence the confusion was complete. Sir M. Foster, as he said in a letter to me, did not publish any description because he, as usual, wished to wait until he had seen the plant flower for a second season. The name Iris Bismarkiana of course, as Sir M. Foster declared in a letter to me, has the priority.

This very fine species is as difficult to cultivate as the fine I. Lorteti, Barbey. It resembles that species and I. Susiana, from Persia. It is a tall, very large-flowering species, with regular, large falls, and much finer-coloured flowers than those of any variety of I. Saari.

If gardeners and amateurs do not save these and many other Palestine *Oncocyclus* Irises, they will certainly become extinct, as the collectors in Jaffa plunder them every spring in a condemnable manner.

See also my note about I. Bismarkiana in the *Gartenwelt*, vii., 1902, p. 10. Charles Sprenger, Naples.

HEMEROCALLIS HYBRIDS.

I was astonished to see the note about *Hemerocallis* on p. 189. For three years I have observed these hybrids, and never found that they are so like to each other as described by Mr. W. E. Gumbleton. They are quite distinct and very beautiful, the pale yellow colour of the flowers having delighted many. It seems that *H. x luteola* is of the same parentage as *H. x Parthenope*, but *H. x luteola* was not known here when *H. x Parthenope* was sent out. It is often the case that the same hybrids are raised in different gardens. *W. Miller, Vomero, Naples.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Conditions in the Cattleya House.—There are in this house plants of *C. Mossiae*, *C. Skinnerii*, *C. Lawrenceana*, *C. intermedia*, *C. amethystoglossa*, *C. Schroderae*, and a few plants of *C. Trianae* that were late in starting into growth, also numerous *Cattleyas* and *Laelio-Cattleya* hybrids that are now making their growths. The nights having become colder, it is necessary to apply a little extra fire-heat to maintain the requisite temperature, failing which little progress will be made. Afford fresh air on every favourable opportunity, as these plants require a free circulation of air at this season, especially when there is plenty of sun-heat. They will thrive under more direct sunlight now than at any other time of the year, and need only be shaded for an hour or so during the hottest part of the day. Owing to this extra amount of fire-heat, more ventilation and exposure to direct sunshine, the plants will become dry more quickly than heretofore, therefore, although water must be afforded with much discretion, because if the potting material is kept in a wet condition the roots will decay and black rot attack the young growths; it will nevertheless be necessary to apply water more frequently. Whenever the weather is dull or wet, the atmosphere in the house must be kept less moist than usual. Such plants as *Cattleya Bowringiana*, the autumn-flowering *C. labiata*, and others that are showing their flower-spikes, will need sufficient water to keep the roots just moist until the flowers have opened, when it must be gradually discontinued. *C. gigas*, *C. Dowiana*, *C. D. aurea*, *C. Hardyana*, and *C. Mendeli*, having completed their growths, will now require less water at the root, but all the sunlight that it is possible to give them, so that the newly-formed pseudo-bulbs may become properly matured. Plants of *C. Trianae* and others which bloom in the spring that have finished their season's growth should be given similar treatment.

Repotting of Various Species.—In collections where a large number of *Odontoglossums* has to

be repotted, the work will occupy a considerable time, but during its progress there are other important matters which must be given attention. It will be seen that plants of *Laelia purpurata*, *L. tenebrosa*, *Cattleya crispa*, *C. lobata*, and a few hybrid *Cattleyas* and *Laelio-Cattleyas* have growths only a few inches high, and as these new growths will soon commence to make young roots, the plants should be examined in order to ascertain if they require more rooting space. In every case the roots should be given sufficient space to grow inside the rim of the pot; therefore when removing plants into larger pots, allow room for two seasons' growth. *Laelia purpurata* is a plant that should not be kept long in a pot-bound condition. Plants that are in good health and have filled their pots with roots, should be treated as follows—Carefully break the pots and, without disturbing the drainage materials, cut off all dead and useless back pseudo-bulbs, then repot the plants in the kind of compost as advised in a former Calendar for *L. elegans*. Whilst growth is in progress the plants should be placed in the warmest and lightest position available in the Cattleya-house. Plants of *Cattleya Mendeli*, *C. Trianae*, and *C. Mossiae*, which have grown too large for their pots, may be safely repotted soon after the new growths are fully made up, as at that time numerous young roots appear from the base of the new flowering bulbs. After the process of repotting do not afford much water, but merely sprinkle a little water around the edge of the compost, using a syringe or fine-rosed watering-can for the purpose.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Broccoli.—These plants are now making rapid progress, but so are the weeds, and these must be cleared away. Chop up the soil between the lines as much as possible, and draw it up to the necks of the plants. Then, if the ground is poor, apply a thick mulching of half-rotten manure between the rows, which will assist the plants to make "heads" of reasonable size. It must be understood that it is not advisable to encourage the plants to make growth that is too "rank" (strong), especially in northern districts, where severe frosts are so liable to occur, or they will not withstand the winter so well. If the plants are growing in rich soil, and the tops are likely to become large and soft, apply a sprinkling of salt on the soil between the lines, and before severe frosts set in lower the "heads" of the plants, inclining them towards the north. In doing this do not disturb the roots more than is necessary.

Beet.—In cases where the roots have become matured, have them lifted and stored in a cool place either out-of-doors or in a shed. We prefer to have them in a shed, from which frost can be excluded. The roots may then be conveniently examined during wet or frosty weather. Build the roots up into a neat heap. Work amongst them some fine soil or ashes, as each layer is laid on; this will keep the roots plump, and prevent the circulation of much air through the heap, which would in time cause them to shrivel and make them unfit for table.

Cauliflowers.—Prick out as many plants as necessary into frames on a sheltered sunny border, and when they have become established expose them to full light and air on all favourable occasions. Do not coddle them, but keep the roots moderately dry during hard weather, and they will better withstand the winter.

Cardoons.—Some of the most forward plants will now require to be blanched. Commence by taking off a few of the outside leaves, then put a tie round the remaining ones to keep them in their place. Obtain a hay-rope, and commencing at the bottom, wind it round and round to the height required. The top strand should always be kept well below the heart of the plant, and must not be drawn too tightly, it being necessary to allow space for the heart to grow. This can be repeated at intervals until a length of about 2 feet has been bound. Commence to earth up as in the case of Celery, and repeat the process at intervals as required by the growth of the plants.

Preparations for Forcing.—On wet days get pits and cellars or any house in which forcing is carried on, thoroughly cleaned and put ready for the purpose. The necessary soil should be placed under cover, where it can be chopped up and turned over several times, so that it will be ready when required for use. If such work be postponed, it may have to be "rushed" at the last, and the work consequently be imperfectly carried out.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cherries.—Pot-trees intended for the supply of early fruit should have any worthless spurs, which are occasionally found in Cherry trees, removed. Examine the drainage of the pots; also any surface soil that does not contain roots should be removed and replaced with good turfy loam mixed with bone-meal. Protect the pots from heavy rains, and keep the plants cool, to prevent their making any growth.

Figs.—As soon as plants in pots have lost their foliage they should be thoroughly cleansed with soft-soap and water by means of a stiff brush, which should be repeated at short intervals to make sure that any plants infested with scale are clean before the forcing season arrives. Plants standing out-of-doors will require the protection of a cool-house in the event of severe weather. While growth is dormant little water will be required; but the soil in the pots should not be allowed to become dry.

Pot Vines.—Give attention to plants standing out-of-doors, to ascertain the condition of the soil, that the plants may not be allowed to suffer from want of moisture at the roots; also see that the plants are made secure against rough winds. Where proper attention was given to "stopping" as growth advanced, little in the way of pruning will be necessary now. Early pruning ensures long rest for the plants and proper healing of the wounds in the dormant season.

Strawberry St. Joseph.—Pot plants now freely fruiting with us are being placed in Peach-houses and Vineries where the necessary circulation of air can be secured. The later batches now coming into flower are being plentifully supplied with stimulants. To secure fruit of good size give strict attention to feeding; and it is essential the plants should not be allowed to suffer from want of water at the roots. We are now layering in 60-sized pots runners of this variety, to supply fruit next season during September and October.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Root Pruning, &c.—It is generally known that in most cases trees of large size which have been unproductive for many years may be brought into a state of bearing by lifting their roots, trimming them, and replanting them nearer to the surface. In such a position the roots can obtain benefit from the rays of the sun and from supplies of suitable manures, the application of which is a necessary part of good cultivation. Although somewhat early to lift entirely the roots of large trees, it is not too early to complete those trees of which half the roots were operated upon last autumn or spring. Dig out a trench from 3 to 5 feet away from the stem, working well beneath the roots, and severing those which are growing in a downward direction, as these are among the principal causes of failure. I have repeatedly lifted very large Pear-trees and Peach-trees with success, relaying the roots at various depths after trimming off the damaged tips. The drainage should in all cases be good, but in naturally well-drained soil artificial drainage is not needed. If some of the severed "tap" roots are very thick, place a slate or tile beneath them to prevent any fresh roots taking a downward direction. Three years ago several large bush Apple-trees in these gardens were lifted and set further back from the walks. We added a little fresh soil with the staple as the work proceeded. These trees were lifted somewhat early and when in full leaf, but by heavily syringing them twice daily in bright weather they soon recovered,

and are now bearing very heavy crops of clean fruits, especially the varieties King of the Pippins, Mère de Ménage, May Queen, Nelson Codlin, and Cox's Orange Pippin. When root-pruning large trees the principal requirement of success is that every strong root that has got deeply into the subsoil be cut. In replanting the roots use plenty of sweet loam, old mortar rubble, bone-meal, &c., and in respect to Apple and Pear-trees, ram the soil (if not too wet) rather firmly when filling up. Relay the roots at various depths; and I would repeat that it is best not to be afraid of commencing the work of digging out the trench at a considerable distance from the stem. Dig deep enough to get well beneath the roots, and the extra amount of labour this entails will be more than repaid.

Gathering Fruits.—When gathering fruits having soft flesh, such as Peaches and Nectarines, take great care not to bruise them. Peaches and Nectarines should be gathered when a little under-ripe. Gather Pears at intervals, in order to prolong the supply. The late-ripening varieties should be allowed to hang on the trees until the very last; and if the borders are too dry, supply water to the roots of the trees.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Hyacinths.—Batches of bulbs should be potted at intervals of three weeks until the end of October, if it is intended to obtain flowers over as long a period as possible. The following varieties will be found suitable for flowering early:—Single red, Baron von Tuyl and Homerus; single white, Grand Vedette; double white, La Tour d'Auvergne. For succession, a selection may be made from a list supplied by any reliable nurseryman. A suitable potting compost may consist of three parts loam, half a part leaf-soil, and half a part well-rotted manure, together with sufficient coarse sand to keep the soil porous; the actual quantity must depend upon the nature of the loam that is used. One bulb may be placed in a 5-inch, or three in a 6-inch pot. Let the top of the bulb be just above the surface of the soil. After the potting has been done, plunge the pots in ashes in the open air, covering them with 3 or 4 inches of the material. The bulbs must be examined frequently, and be removed to a cold frame when they have made an inch of growth. Although it is possible to hasten the flowering of the early blooming varieties considerably, the forcing must be done very gradually, affording them only a moderate degree of heat. No attempt should be made to hasten the growth of the plants until they have filled the pots with roots.

Tulips.—Place these in pots or boxes in quantity according to the number required. For the early batch it is best to plant the Tulips thickly in pans or boxes, and lift and repot them as they come into flower, as they bloom so irregularly early in the season. The scarlet variety Duc van Thol and white Pottebakker are good varieties for early forcing. Successional batches may be potted in 4½- and 6-inch pots, three bulbs being placed in the former size, and five or six in the latter. Identical soil and similar treatment to that recommended for Hyacinths will be suitable for Tulips. The following are useful varieties to succeed the earliest batch:—Chrysolora (yellow), Vermilion Brilliant, Cottage Maid (pink and white), Keizer's Kroon (yellow and red), Joost van Vondel (crimson and white), L'Immaculé (white).

Early-flowering Gladioli.—These may be had in bloom from April to June, and they are extremely beautiful subjects, either in pots or in the cut state. The varieties Colvillei albus and delicatissimus are probably those most generally grown, and both are very useful. In potting, place six bulbs in a 5-inch pot, and keep them just below the surface of the soil. Stand the pots in a cold frame, and plunge them to the rims in ashes. Hard forcing should not be attempted, but early in the spring some of the pots may be placed in moderate warmth, which will induce the plants to flower early in April. The latest batch may be allowed to come into flower in the frame.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON Bart., Paddockhurst, Sussex.

Climbing Plants.—These may now be thinned out and new wood trained in, that it may become matured before winter. For main branches and strong-growing species use short galvanised iron staples, as wall nails would not be strong enough. Magnolias may be thinned freely, especially if the plants are old, they will then flower better next season. Plants of Clematis do not require to be pruned severely, but lay in plenty of wood and it will afford some protection during the winter. The growths may be again thinned out in the spring if this is necessary. Chimonanthus fragrans and Jasminum nudiflorum flower on the young short growths and should not be tied in severely, as this would destroy the effect when the plants flower. Plants of Ceanothus should be provided with considerable space to allow them to develop; train in a moderate quantity of young wood. Loniceras may be thinned freely, and growths of the variety "Early Cream" may be left hanging loosely, if screened from high winds. Tropæolum speciosum has grown well this season; the longest growth made here on a plant on an east aspect measures 20 feet. The young plants put out in May are now at their best. Seeds are now fit for gathering. Cut down the old growths to about 4 feet from the ground, especially those that have produced seeds. Ivies are growing strongly, and any shoots that are not required should be taken off and heeled-in, especially of the small-leaved and variegated varieties, for planting round bare walls and buildings where other climbing or trailing plants will not thrive.

Bedding Begonias.—The recent rains have been very beneficial to the tuberous-rooting varieties, and the plants now present a mass of bloom. They will produce a good effect for some weeks to come, unless frosts occur. Remove old leaves and decayed flowers, and "hand-weed" the beds, but do not use the hoe, as it would break the leaves.

Stocks and Asters.—Remove these plants as soon as they have ceased to flower, and if it is intended to plant the beds with Wallflowers, dig them over, and apply a good dressing of soot. No manure will be required if the beds were dressed in the spring. Put the plants out at once, that they may get well established before winter.

Housing of Plants.—The structures should be got ready without delay for the housing of tender plants. Specimen plants of Heliotrope are the first to suffer from frost, and should be given attention at once. Palms soon receive injury in wet and cold weather, but any orchard-house will afford them sufficient protection if frost can be kept out.

General Work.—Apply the hoe occasionally through seed-beds of Myosotis, Wallflowers, and similar plants. Keep the grass verges cut closely, as this will impart a neat appearance to the garden, but the time is come when fallen leaves and rubbish tend to make the place look untidy.

"ATLAS DE POCHE DES ARBUSTES ET ARBRISSEAUX."—This useful little volume of the "Bibliothèque de Poches du Naturaliste" series (published by PAUL KLINSIECK, Rue Corneille, Paris), treats of the shrubs and bushes most easily cultivated in gardens. The amateur who is learned in smaller plants is often puzzled with those of larger growth, so that this small volume of descriptive text and 122 coloured plates should be of great service to him in identifying his plants. The pictures do even less than justice to the originals, and are very unlike the flattering portraits sometimes seen in florists' catalogues; they are drawn by M. A. L. REGNIER. If we must admit a doubt, it is whether Roses can be identified by descriptions, and even by illustrations. Souvenir de la Malmaison, Paul Neyron, &c., may not always be distinguishable from new varieties and hybrids, even with the aid of this guide. This applies, though with less force, to other plants where the genus is clearly shown, but the species or variety less easily recognised.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, OCT. 1 { Société Française d'Horticulture de Londres meeting.

SALES FOR THE WEEK.

MONDAY NEXT—

Flowering Bulbs, at Stevens' Rooms, 38, King Street, Covent Garden, W.C.

MONDAY to FRIDAY NEXT—

Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY and WEDNESDAY NEXT—

Unreserved Clearance Sale of the whole of the Greenhouse Plants, Orchids, and Store Plants, at Hassocks Nurseries, Hassocks, by order of Messrs. Balchin & Sons, by Protheroe & Morris, at 12.

WEDNESDAY NEXT—

Palms, &c., from the Continent. Narcissus in variety, Lilium Harrisii, and Palm Seeds, at 67 and 68, Cheapside, by Protheroe & Morris, at 4.—Flowering Bulbs, at Stevens' Rooms, 38, King Street, Covent Garden, W.C.

THURSDAY and FRIDAY NEXT—

Unreserved Clearance Sale of the whole of the Greenhouse and other Plants, Greenhouses, Vans, Mare, and sundries, at Wallwood Nursery, Wallwood Road, Leytonstone, by Protheroe & Morris, at 12.

FRIDAY NEXT—

Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —55°4'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 21 (6 P.M.): Max. 61°; Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 22 (10 A.M.): Bar., 30.1; Temp., 59°. Weather—Dull.

PROVINCES.—Wednesday, Sept. 21 (6 P.M.): Max. 56°, South Coast of England; Min. 51°, North-East Coast of Scotland.

Canker.

GARDENERS are wont to attribute this diseased condition to various causes — mainly climatal. Bad drainage, water - logged or otherwise unsuitable soil, especially one deficient in potash, frost, disparity of growth between stock and scion—all these and other causes have been assigned as contributory to the disease, as indeed they well may be.

It is only of comparatively late years that any serious attempt has been made by scientific experts to investigate the real nature of the disease, and even now they can hardly be said to have arrived at any definite conclusion. The fact that certain varieties are more subject to canker than others, even when grown under the same conditions, obscures the issue, although we are familiar with similar cases of immunity in human beings—scarlet fever, for instance, will not necessarily attack all the children of one family, though all may be equally exposed to it. SORAUER, a great authority on plant diseases, attributed the appearance of canker to the action of frost; whilst HARTIG, an equally great authority, is of opinion that the malady is due to the action of a parasitic fungus (Nectria). The two supposed causes are by no means inconsistent one with the other; the frost may crack the bark, and thus afford an opportunity for the spores of the Nectria to enter and germinate in the

cracks and supply its requirements from the rich stores laid up in the bark. Insect-puncture or any other injury would in like manner favour the inroads of the fungus. The spawn-threads do not penetrate deeply into the wood. Why should they, when they find what they want in such abundance in the bark?

The subjacent tissues, deprived of their nutriment, dry up and shrivel. Possibly, though this has not been proved, the fungus may excrete some injurious fluid which corrodes the tissues. At any rate, an attempt is often made by the tree to heal the wound by the formation of a thickened ring of new tissue round it, just as happens when a wound on a tree-trunk is, as it is called, healed by "occlusion." If the new growth gets the upper hand, the wound is gradually closed. But there is another form of canker in which the wound or exposed surface is not surrounded by any thickened rim; and this "necrosed" condition is said to arise quite independently of frost. With a view of ascertaining what part, if any, the fungus plays, a Polish investigator, M. J. BRZEZINSKI, cultivated the fungus in the laboratory, and having obtained some "pure cultures" unmixed with any other fungus spores, he inoculated some young Apple-trees with the Nectria, but always with negative results. The spores germinated freely enough under glass, but when transferred to the Apple-trees the resultant spawn simply spread over the surface of the bark without penetrating it or injuring it in any way. If M. BRZEZINSKI'S experiments are confirmed it will be necessary to acquit the Nectria fungus of producing canker, though it may well come after injury from some other cause, as has already been pointed out.

Having satisfied himself that the fungus was not the culprit, the Polish observer set to work to ascertain the real cause of the injury. His attention was drawn to certain stripes (*filons*) of yellowish colour traversing the wood at some distance from the cankered spaces, but sometimes establishing a connection between them. GOETHE, SORAUER and others have also seen these discoloured portions of the wood, but attributed them to the action of frost. For M. BRZEZINSKI these lesions of the wood are the essential features of the canker. On further examination he found them tenanted by bacteria. By cultivating these bacteria he obtained material with which he inoculated several young Apple-trees, and induced in them the formation of canker. For him, therefore, there is no doubt that the true cause of canker is a bacterium, which he has described and figured as *Bacterium mali*. "Gumming" in fruit-trees is also attributed by him to the action of bacteria.

No doubt other observers will set to work to test the correctness or otherwise of the observations made by the Polish naturalist. They will find the full record in the *Bulletin of the Academy of Sciences of Cracow* for March, 1903. Fortunately the author has written in French, and has appended eight well-executed plates.

Unfortunately, these researches do not tell us how to combat the malady. It is here the practical cultivator will step in, and by ameliorating the soil-conditions, cutting away the diseased portions, and like measures, will give increased vigour to the

tree, and enable it to combat successfully with its enemies, be they bacterial or fungal.

When the laboratory which we are promised is installed at Wisley, and a competent investigator appointed, this question of canker might be selected as one of the most pressing and important subjects for investigation.

JACARANDA MIMOSÆFOLIA. — Our Supplementary Illustration to the present issue has been reproduced from specimens kindly sent us by Mr. W. H. CLARKE, of Aston Rowant Gardens, Oxon. Mr. CLARKE writes:—"Considering with what ease this magnificent Brazilian tree may be grown, it is surprising that it is not more often met with in private gardens. The panicle of flowers, of which a portion is shown in the illustration, was taken from a plant growing in the cool end of the conservatory here, and is 18 feet high. It is, however, not necessary to allow the plant to attain to these dimensions, as it submits very well to the use of the knife, and can be kept within bounds. The foliage alone is an object of beauty, growing from 18 in. to 2 ft. long. The plant is planted out in the border, and beyond receiving a top-dressing of good loam each season, and an occasional watering with liquid manure, requires little attention." The foliage is pinnate, and resembles that of some of the Acacias. The flowers are of a rich blue colour. In the illustration at C is depicted a section of the flower showing the irregular, curved, tubular corolla, the irregular stamens, and the ovary. The pollen-grains are oblong with a single slit, and are shown at D magnified 150 diameters. Of the five stamens one is abortive, and bears two sets of brush-like hairs, as at B. The filament is also provided with glandular hairs, shown magnified at A. These hairs are evidently connected with the fertilisation of the flower by insect agency. In the *Index Kewensis* *J. mimosæfolia* is referred to as *J. ovalifolia*.

THE LATE DEAN HOLE.—Before the commencement of the lecture at the afternoon meeting at the Royal Horticultural Hall on Tuesday last, Mr EDWARD MAWLEY who presided, made a touching reference to the loss that horticulture has sustained in the recent death of the Dean of Rochester. He said that if the Dean had been alive they knew how much he would have liked to be present that day when the National Rose Society was making a new venture. Dean HOLE had occupied a unique position in the horticultural world. Those present may have known some who had a deeper and more extensive knowledge of the art and craft of gardening, but where was there another Dean HOLE? Who had such power or charm as a writer or such enthusiasm as an advocate of Rose-culture? The late Dean had the power to so touch the hearts of men that they became imbued with his own enthusiasm. The National Rose Society had indeed sustained a severe loss, for the late Dean was its first and only President. Long before the Society's birth, Dean HOLE had organised Rose shows and popularised Rose-culture. From the standpoint of the Rosarian alone, what a useful life he had lived! His book, *A Book about Roses*, had made more Rose growers than any other book had done, and its circulation had probably been greater than that of any book that had been written on a gardening subject. Mr. MAWLEY said that he believed that the Dean obtained the power to influence others from the fact that he had invariably appealed to the people's hearts, and not to their heads. In the opening chapter of his book he wrote, "If you want to have beautiful Roses in your gardens, you must have beautiful Roses in your hearts." Mr. MAWLEY concluded by proposing, by the

consent of the Council, that a joint letter of condolence from the Royal Horticultural Society and the National Rose Society be sent to Mrs. HOLE, which was carried. A life-sized photograph of the late Dean by RUSSELL & SONS was exhibited in the Hall throughout the day, the frame being wreathed with Roses supplied by Mr. GEO. PAUL.

DAHLIAS.—Some very pretty novelties were shown at the Royal Horticultural Hall on Tuesday last, description of which will be found in our report. We were glad to find that in the task of making awards to these, the National Dahlia Society's Committee was strengthened by a delegation from the Royal Horticultural Society's Floral Committee. Each award, therefore, included that of the National Dahlia Society's Certificate of Merit, and the Royal Horticultural Society's Award of Merit. By this arrangement much time was saved, and overlapping avoided.

AN AUTUMN ROSE SHOW.—Rosarians were delighted on Tuesday last to find that the first attempt to hold an exhibition in the autumn was an unqualified success. The exhibition will therefore be very likely to become an annual event. If this be so it will serve a useful purpose by drawing the attention of cultivators to varieties that are either continuous bloomers, or that are capable of producing a second crop of good flowers. It was not to be expected that the Society would have reason to award two gold medals to novelties exhibited in September, but that such was the case will help to further mark the extraordinary success of the new venture.

THE NATIONAL POTATO SOCIETY.—The chief public function of this new Society for the present year will be its exhibition of Potatoes at the Crystal Palace on October 11 and 12 next, when there can be no doubt but there will be a great show of tubers of a most interesting kind, and a gathering of Potato-growers from all parts of the kingdom. The recent Potato booms have done much to create interest, especially in new varieties; and whilst the booming, it is hoped, may be temporary, it is equally hoped that the interest now existing in so important an article of food may be enduring. At a meeting of the Committee of the Society recently held it was agreed to prepare a catalogue of the exhibits, entries, and other information for use at the show. Judges of the various classes were appointed, and committees formed to deal with various subjects of importance that may arise out of the exhibition. It was agreed to invite the Earl of ONSLOW, President of the Board of Agriculture, to preside at the luncheon on the first day. Applications for space are being received from all parts of the kingdom, and without doubt all the finest novelties in Potatoes will be on view. As to the protection of these, however, the Committee will take no responsibility. Potato growth is this season unusually late, great breadths being still green and vigorous. All needful information respecting the exhibition may be had of the honorary secretary, Mr. W. P. WRIGHT, Postling, Hythe, Kent.

THE PRINCIPALSHIP OF HUDDERSFIELD TECHNICAL COLLEGE.—The Corporation of Huddersfield have appointed as Principal of the Technical College, Mr. JAMES FRANK HUDSON, M.A. Oxon, B.Sc. Lond., aged 32 years, and son of Mr. JAS. HUDSON, gardener at Gunnersbury House, Acton. There were over fifty applicants for the position. The salary, says the *Yorkshire Post*, is £500 a year, with the prospect of being appointed director of education for the borough should it be decided to create such an office. Mr. HUDSON was educated at St. Paul's School, West Kensington, and was open scholar exhibitor and prizeman of Jesus College, Oxford. He obtained

first-class honours in the mathematical moderations of 1893, and in the finals of 1895, and honours in physics in 1896, when he took his degree as M.A. He is also B.Sc. of London. He has been assistant lecturer in mathematics at Jesus College, Oxford, and was demonstrator of physics in the Clarendon Laboratory, Oxford, from 1897 to 1900. Mr. HUDSON was previously head of the department of mathematics in the Hartley University College, Southampton, and examiner to the Oxford and Cambridge Schools Examination Board. Mr. HUDSON has taken up his work at the College.

MECONOPSIS INTEGRIFOLIA.—In respect to the note published in our last issue, Messrs. JAS. VEITCH & Co., Ltd., Chelsea, have informed us that they have a quantity of plants of this species growing in their nurseries, some of which are in flower.

THE ORCHID EXHIBITION AT DÜSSELDORF.—In respect to this exhibition, of which some details were published in our last issue, M. MAURICE VERDONCK, of Gentbrugge, near Ghent, has furnished us with the following particulars: It appears that M. PEETERS, Brussels, was the only exhibitor in the class for one hundred varieties. In Class 10, for a collection of sixty *Cattleyas*, *Lælio-Cattleyas*, and *Lælias*, the 1st prize was won by M. CH. MARON, Brunoy (Seine et Oise). In Class 4 for a collection of fifty varieties of Orchids, M. MAURICE VERDONCK was awarded 1st prize. The 1st prize in Class 14 for a collection of thirty *Cypripediums* and *Selenipediums* was awarded to M. DRAPSDOM, of Laeken, near Brussels. In addition, M. PEETERS received an extra prize for a group of *Cypripediums*, also 1st prize for a group of plants of *Vanda coerulea*, and four 1st prizes for specimen plants. M. CH. MARON won 1st and 2nd prizes for specimen plants, and M. MAURICE VERDONCK a 1st prize for a collection of twenty Orchids of botanical interest, also a 2nd prize for twenty-five Orchids (distinct varieties) in flower.

STREPTOCARPUS.—Messrs. W. BULL & SONS, Chelsea, have sent us a few flowers of their strain of these popular flowering plants. They are remarkable for large size and for the many shades of purple colour they exhibit. Some are pure white, so far as general effect is concerned.

SALE OF AN OLD ESTATE.—On the 15th inst. Chartley Castle, near Stafford, the seat of Lord FERRERS, was sold by public auction. The lot comprised Chartley Hall, the castle ruins, and the park, and consisted of 2,024 acres. The sum paid was £55,000, and the purchasers were the Trustees of the late Colonel CONGREVE, formerly Chief Constable for Staffordshire, and father of Lieutenant-Colonel CONGREVE, V.C.

LADYBIRDS AT A DISCOUNT.—Either vegetation in and around Grimsby is in a foul condition, or a strongish breeze has been blowing steadily towards that locality, carrying all the ladybirds of the district to that spot, for a morning paper recently informed us that a correspondent had telegraphed concerning ladybirds that the atmosphere on the previous day had been crowded to darkness by a huge wave of this green-fly exterminator—the air was darkened by them; people out walking were covered, so were the streets and roads, and millions were crushed to death by pedestrians, especially on the towing path by the Humber. On one small plant nearly 400 were counted. The readers of the *Gardeners' Chronicle* of some twenty or more years since may remember a terrible slaughter among these insects on the east and southern coasts of England, when immense tracts of sea were found to be thickly covered by their dead bodies; in some places the receding tide left behind it long wreaths of corpses. The writer remembers being

on board a ship lying off the coast at Beachy Head waiting for a favourable "slant" of wind, the sails in bunts flapping idly against the masts, when the quick-eyed captain gave the order to set the sails for a wind coming along. The sails were set, and a great crowd arose—there were released from the bunts of the sails countless myriads of ladybirds which had been blown from off shore to a "green-flyless" waste of canvas—and the deep was the ladybirds' grave!

GALANTHUS ELWESII.—Messrs. BARR & SONS, King Street, Covent Garden, have shown us some bulbs of this species of Snowdrop, imported from Asia Minor. They are interesting as being much larger in size when compared with the ordinary garden Snowdrop, *G. nivalis*, some the bulbs turning the scale at over $\frac{1}{2}$ an oz.

A WELSHMAN IN AMERICA.—The American papers have announced the death of Mr. ANEURIN JONES, a Welshman, who was at one time Superintendent of Public Parks in New York City and in Brooklyn. Mr. JONES, who was in his eightieth year, died at Los Angeles, California. In 1883 deceased, whilst Superintendent of the New York Park Department, by cutting down a number of trees in the Central Park, caused a considerable amount of protest from the public. He was retired in 1885.

PYRETHRUM "QUEEN ALEXANDRA."—This is a new form of "Marguerite" recently sent out by Messrs. F. SANDER & SONS, and of which we lately saw a large batch at the Bruges nurseries. It is of relatively compact habit, with white flower-heads nearly 3 inches across. The ray florets are spreading, the central ones tubular, 5-parted, as in the Anemone-flowered Chrysanthemums. The flowers last in water for weeks.

GRAFT VARIATIONS.—In 1898, says M. JURIE in the *Enophile* for July, p. 194, I grafted my hybrid 340A on to Grasset's *Cordifolia rupestris*. This hybrid, late and unpleasant in taste though it was, became, after grafting, very early and absolutely devoid of foxy flavour; further, the stock had transmitted to it a greater power of resistance to the phylloxera, and had rendered it more lime-resisting. This variation remained a mystery to me, until study of M. DANIEL's work on variation in the graft and inheritance of acquired characteristics gave me the clue to it. I was surprised at the possibilities that mixed grafting offers for the systematic improvement of plants, the perfection of sexual hybrids by introducing into them in this manner such qualities as they lack. I have resolved to pursue my experiments to see if I can reproduce analogous variations.

PUBLICATIONS RECEIVED.—*Botany of South-Western New South Wales*, by Fred Turner, F.L.S., being a reprint from the Proceedings of the Linnean Society of New South Wales, for 1904, part 1, May 25.—*Cassell's Popular Gardening*; part 13 includes articles on First-rate Market Apples, A Bouquet of Dahlias, Forcing Daffodils, &c.; published by Cassell & Co., London, price 7d.—*Flora and Sylva* for September contains an article by Mr. Joseph Godseff, on *Lælio-Cattleya* × *Impératrice de Russie* (*Cattleya* Meudeli × *Lælia* Digbyana, with coloured plate of L.C. × Rex, which appears to have been accidentally inserted instead of one representing L.C. × *Impératrice de Russie*). Also a first-rate coloured plate of *Rehmannia angulata*, which Messrs. Jas. Veitch & Sons imported from China, and have shown at recent exhibitions.

COLONIAL REPORTS AND BULLETINS.—*Journal of the Department of Agriculture of Western Australia* for August.—*Railways in Rhodesia*: this publication has been issued by the British South African Company, and contains much interesting information and many well-executed illustrations of the railways and of agriculture in Rhodesia.—*Reports on the Botanic Station, Agricultural School, Experimental Station, and Experiment Plots, St. Lucia, 1903-1904*, issued by the Imperial Department of Agriculture for the West Indies, at Barbadoes.—*The Transvaal Agricultural Journal*, issued by the Agricultural Department, Pretoria, containing 664 pages, in addition to many illustrations.

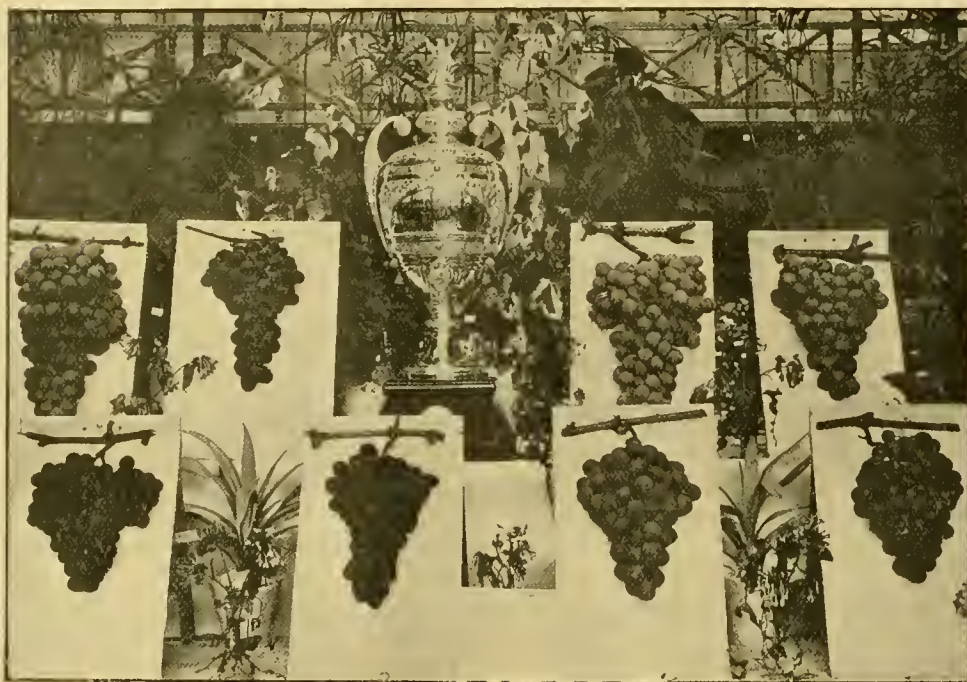


FIG. 90.—THE FIRST PRIZE EXHIBIT OF A COLLECTION OF EIGHT BUNCHES OF GRAPES AT THE EDINBURGH SHOW.

GRAPES AT EDINBURGH.

THE illustration at fig. 90 shows an exhibit of eight bunches of Grapes, with which Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, obtained the 1st prize at the Royal Caledonian Horticultural Society's show at Edinburgh on the 14th inst. The varieties shown were Muscat of Alexandria (two bunches), Black Hamburgh (two bunches), Madresfield Court, Black Muscat (two bunches), and Gros Maroc. The 1st prize included a Challenge Trophy, valued at 50 guineas, presented by Mr. W. H. Massie, Edinburgh, £15 in cash, and a Gold Badge.

In fig. 91 is shown a single bunch of the variety Buckland Sweetwater, which was awarded 1st prize for a bunch of any white variety of Grape other than that of Muscat of Alexandria. It was a very fine bunch, and was exhibited by Mr. Matheson, gr. to Lord Kinross, Glasclune, North Berwick. The bunch measured rather more than 10 inches across. For our photographs we are indebted to Mr. A. D. Richardson, landscape gardener at Marionville, Sciennes Gardens, Edinburgh. In the report of this show in our last issue, it was stated that Mr. Knight obtained 2nd prize in the class for a group of miscellaneous plants, but we are informed that the 2nd prize was awarded to Mr. J. E. Davis, gr. to Col. E. R. S. Richardson, Ballathie. Mr. Knight had the 3rd prize.

DAHLIA "J. B. RIDING."

THE Cactus Dahlia shown in our illustration at fig. 92, p. 227, represents the variety "J. B. Riding," a first class novelty, which has been awarded a Certificate of Merit by the National Dahlia Society, and an Award of Merit by the Royal Horticultural Society. The flowers are of large size, but they possess an appearance of refinement. They are of true Cactus type, each floret being long and narrow, and folded back at the margins. In colour they possess several shades of yellow, being of lighter tint in the centre, and having on some of the older florets a faint shade of pink colour.

Our sketch was made by Mr. W. G. Smith from a flower shown by Messrs. J. Stredwick & Son, Silverhill, St. Leonards.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

FRUIT GROWING.—Mr. Miller (see p. 208) is still unable to discern the difference between the facts as originally stated by me and his own misconstruction thereof. The dispute hinges upon what in professional dictum would be called "capital" value of the trees in question *versus* the "annual" value of the same, and it becomes

necessary for me to repeat my original statements. I said in my first letter "that some fruit-trees that had been planted ten years had been valued by a professional valuer of such things at some £5 to £6 each tree, and if we accept an average of £5 each for 10,000 trees, we have a total value of £50,000." Now I should have thought that anyone, but more especially a man of Mr. Miller's experience, would have clearly understood that my figures could only mean the "capital" value of the trees as they stood, or, in other words, so much added value upon the estate. Moreover, as I did not mention a single word about the annual value of the trees, or anything at all about any calculated returns from these said trees, Mr. Miller has no right to assume that I meant such and such a thing. It is the old game of setting up a figure-head and then cleverly demolishing the same, in his own way and with his own weapons. *W. Crump, Madresfield Court Gardens, Malvern.*

SCARLET RUNNER BEANS.—In regard to your correspondents' remarks on pages 175 and 190, in reference to Runner Beans, may I state that we have here three lines of different varieties—(1) "Giant White Dutch," (2) ordinary Scarlet, (3) "Champion Longpod." The two Scarlet Runners germinated badly, flowered late, and set scarcely any flowers, while the White Runner germinated, flowered, set, and fruited quite as well as could be desired. We have had, and are having, a splendid return of excellent pods. The White Runner did not suffer nearly so much from the intense heat as did the Scarlet variety. *Cymru, Welshpool.*

PROPOSED MEMORIAL TO THE LATE DEAN HOLE.—There will be very many doubtless moved by admiration of, and affectionate regard for, the late Dean Hole, who would gladly have part in a memorial to him. May I urge the claim of Cauntton Church, which he so much loved, and in which he ministered five years as curate-in-charge, and then thirty-eight years as vicar, as the fitting place where such memorial should take form? At the restoration of the church in 1869–70, much had to be left undone for want of funds, as for instance the replacing of the old decayed chancel-screen with a new one, the preservation of the chancel walls from damp by



FIG. 91.—"BUCKLAND SWEETWATER" GRAPE AS EXHIBITED AT THE EDINBURGH SHOW.

an external stone drain, the wainscoting of the internal chancel walls with oak, and the construction of a choir-vestry in lieu of the present

by your favour, to appeal to all who have received benefit and pleasure from his speeches, his sermons, and his books, to help in achieving some

Memorial Fund," which I propose to bank with Messrs. Saml. Smith & Co., Newark, and in due course I will publish an account of receipts and



FIG. 92.—CACTUS DAHLIA "J. B. RIDING": COLOUR OF FLOWERS YELLOW, WITH PINK AND ORANGE SHADING. (SEE P. 226.)

insufficient accommodation on the tower-floor, &c. To these may be added a stained window in special memory of the Dean. I venture therefore,

at least of the above-suggested works; and I shall be most thankful to receive subscriptions for the purpose of forming a "Dean Hole

expenditure, together with a list of subscribers. John Tinkler, M.A., Vicar of Caunton, near Newark, Notts, September 14, 1904.

QUICK GROWTH OF MELONS.—This season has been an exceptionally good one for the growth of Melons, for never before have I grown them in such quick time from planted-out plants. The seeds were sown in 60-size pots on May 11, one seed in each pot, and fully ripened fruits were ready for the table on July 28. The varieties grown are not those which I have found come to maturity the quicker, but such standard kinds as Blenheim Orange, Hero of Lockinge, and Invicta, a new scarlet-fleshed variety of exceptionally deep pulp and high flavour. Of thirty fruits, Blenheim Orange was the heaviest, many of the fruits weighing 6 lb., and all perfect specimens. The mode of culture is the extension system—viz., training the single growth to almost the top of the house before stopping it, when the side laterals grow very readily, and upon these the fruit is obtained. There are some few kinds which are rather shy in fruiting on the first lateral growths, and if these are stopped at the first or second leaf the subsequent growths produce female flowers abundantly. The foregoing summarises the culture practised here, and I maintain this extension system is a much better plan than that practised by some growers of stopping the main growth when it reaches the first wire, and taking up the successive growths which follow. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

VARIETIES OF PEAS.—None of your correspondents have mentioned the variety "Thomas Laxton." Anyone in quest of a good first early marrow Pea cannot do better than give this variety a trial. We have grown it for two years in succession, and it has given great satisfaction, being a heavy cropper and possessing first-class flavour. The plants grow 3 feet high, and the variety is a much more profitable Pea to grow than Gradus. The new Pea named Prestige, which was introduced by Messrs. James Veitch & Sons, is also a decided acquisition as a second early marrow Pea. It has very dark foliage, is a splendid cropper and possesses good quality. I can endorse all that "R. M." stated concerning the variety Alderman, which I have grown for four years with success. As a late Pea none crops better than Veitch's Autocrat, and we are still gathering [September] from a row 50 yards long which has never been aided by watering during the long period of drought. This row was sown in the middle of June. *A. Jefferies, Moor Hall Gardens, Essex.*

PRUNUS PISSARDII.—I have a few trees of this exceedingly ornamental species. Each year their bloom makes them very noticeable, and they are much admired. This season some of them have fruited for the first time. The Plums are nearly round, somewhat small, rich and sweet in flavour, and in colour orange with "semi"-transparent carmine tinge, and also being glossy when on the tree they are very attractive, particularly so to birds, which quickly reduce the number of fruits even before they are ripe. The plants appear to be shy bearers. *Harrison Weir, Poplar Hall, Appledore, Kent.*

POTATO ELDORADO.—On page 190 your correspondent "A. H." gives the yield of potatoes from one tuber of this variety, weighing five ounces, grown by Mr. Henry Drew, of Peamore, the resulting crop being eighteen pounds. Last spring I purchased two pounds of the variety Sutton's Discovery direct from Messrs. Sutton & Sons, Reading. These consisted of nine tubers, one of which was small with only one eye, so that practically I had to work from eight tubers. By the end of March I divided these into fifty-four sets, potting each set into a 48-pot and placing the pots into a moderately-heated frame. As soon as sufficient growth was made I took cuttings from each plant, potting them into 60-pots. When I had secured as many cuttings as I required from the original sets, I potted the latter into 6-inch pots and grew them steadily in a cool frame till planting time. When I finished propagating I had 287 sturdy plants with short joints, averaging about forty-eight plants from each five ounces of tuber. On the 17th May I planted 263 plants on well worked land without any manure in rows 3 feet apart and about 2 feet between the plants in the rows. In August the haulm was 2 feet in height and the same distance through. The tubers are now

lifting up the ground about the roots, and on examining one root I found six tubers close together near the surface. I have not used any artificial manure, but have given copious supplies of water twice during July. Judging from the appearance of the growing haulm it will be the end of October before the tubers are ripe. I hope to inform you of the total weight of tubers when lifted. *H. Green, Nocton Hall, Lincoln.*

EMIGRATION TO SOUTH AFRICA.—Although South Africa is not the country I should advise a gardener to emigrate to on speculation, nevertheless the letter of "One who has been bitten," on p. 20, is not a fair statement of the circumstances. Since the year 1870, shortly after which time your frequent correspondent, the late Mr. Adlam, came out to me as general assistant, a number of other young men have served this institution in the same capacity, and these for the most part now hold responsible positions in various public gardens. At the present time comfortable board and lodging may be had for 25s. per week. Some ten years since it was possible to obtain the same for 21s. per week. This being so, a man having £2 per week would have 15s. each week in excess of his boarding expenses. And the cost of clothing is not excessive; suits may be bought at from 15s. to 30s., the first-named being of necessity poor in quality although respectable in appearance; but careful persons, keeping an eye on the drapers' quarterly sales, may obtain the 30s. suits for cash down at 20s., and even at smaller sums; also one may import suits for 30s. Again, if a young man has a room, and caters for himself, he may do so for about 10s. per week. This is not theory. An assistant has recently left this institution after two years' service, his original salary being £2 per week, and out of this sum the young man in question was able to save not less than 20s. per week, no rent being paid for the room occupied by him, paraffin oil being the fuel used for cooking purposes and for affording light. The chief reason why employers import their assistant gardeners is that one can seldom obtain suitable persons otherwise, thus showing that competent men are not a drug in the market. To my knowledge the curator of one of the South African botanic gardens has inquired for an assistant these four months past, and so far has failed to find a suitable man disengaged, the wage offered to start with being £10 per month. The advantage of employing a person who has been in the country for some time is found in the fact that one may expect him to have gained some knowledge of the South African seasons and climate, all of which are strange to a newcomer. As an additional illustration of the sums paid as wages to assistant gardeners, I may state that had the young man who recently left the service of these gardens remained, he would have been paid 50s. per week as second assistant, the first being the foreman. So far as I know, these wages are not in excess of what is paid to other persons holding similar positions in the Colony. *E. Tidmarsh, Curator, Grahamstown Botanic Gardens.*

THE GINSENG TRADE IN COREA.—It is well known that Korean Ginseng—the dried root of *Aralia quinquefolia* var. *Schinseng*—holds a high place amongst the medicinal products of the Far East, and it may be interesting to know, on the authority of a circular letter recently issued by the United States Minister at Seoul, in reply to inquiries relative to Ginseng seeds and plants, that the Ginseng farms are some sixty miles distant from Seoul, and that there is no person there to whom application could be made for seeds or plants. The American missionaries residing near the farms have decided not to attempt to export the seeds and plants, as such a course would ultimately cause trouble with the natives. The only market for the roots is in China, and this is said to be overstocked, while the Korean product, the especial value of which is due to conditions of soil and climate, is increasing so much that the purchasers of the last crop had to destroy a large quantity in order to keep the supply more nearly within the demand.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 20.—The Royal Horticultural Hall in Vincent Square, Westminster, was filled with exhibits on Tuesday last, and the number of visitors who attended during the day was exceedingly large. Such was the result of the participation of three societies in the day's proceedings. In the first place the Royal Horticultural Society's Floral, Orchid, and Fruit and Vegetable Committees sat as usual; in the second place the National Dahlia Society's Floral Committee also attended to inspect new varieties of Dahlia that were shown for Certificates; and, thirdly, there was a competitive Rose Show, held under the auspices of the National Rose Society. This was the first autumn show the National Rose Society has ever held, and it was very successful. Many of the flowers exhibited were of remarkable quality, and the entries were more numerous than could have been expected. The result will be likely to induce the Society to hold similar late shows in the future. Two of the National Rose Society's Gold Medals were awarded to new seedling varieties, both of which were exhibited from Belfast, the variety "Irish Harmony" from Messrs. A. Dickson & Sons, and that of "J. B. Clark," a hybrid Tea, from Mr. Hugh Dickson.

Dahlias were also remarkable for their numbers and for their quality. The Committee made awards to thirteen varieties, and on this occasion a deputation from the Royal Horticultural Society's Floral Committee sat with the Committee of the National Dahlia Society, therefore the Awards have been issued by the authority of both societies, a very much better arrangement than heretofore, when the National Dahlia Society has usually certificated a number of varieties, and the Floral Committee of the Royal Horticultural Society also a number of varieties, but not necessarily the same sorts.

There were many Orchids shown, and the awards included one First-class Certificate and five Awards of Merit.

The FLORAL COMMITTEE recommended five awards of Merit in addition to those granted to Dahlias.

The FRUIT and VEGETABLE COMMITTEE recommended Awards of Merit to an Apple, two varieties of Crabs, and a perpetual-fruited Strawberry.

In the afternoon a lecture on Roses was delivered by Mr. GEO. GORDON, V.M.H., which was illustrated by lantern slides.

Floral Committee.

PRESENT: W. Marshall, Esq. (Chairman), and Messrs. H. B. May, Geo. Nicholson, Jas. Walker, E. Molyneux, G. Reuthe, J. W. Barr, C. E. Pearson, R. Hooper Pearson, W. Howe, C. R. Fielder, C. Dixon, C. Jeffries, R. W. Wallace, W. J. Cutbush, W. Cutbush, M. J. James, J. Jennings, C. Blick, F. Page Roberts (Rev.), C. T. Druery, R. Dean, John Green, J. F. McLeod, and C. J. Salter.

Mr. H. B. MAY, Upper Edmonton, staged greenhouse plants, including Bouvardias in variety, the perpetual-flowering polyantha Rose Madame N. Levasseur, and the white China Rose White Pet. Many choice Ferns, &c., were interspersed among the group.

MESSRS. W. WELLS & Co., Ltd., Earlswood, Redhill, Surrey, set up a number of summer-flowering Chrysanthemums, all useful varieties for cutting and decorative purposes (the Champion is an excellent free-flowering yellow variety); also flowers of some exhibition varieties.

MESSRS. W. & J. BROWN, Stamford and Peterborough, staged an excellent batch of pot plants of Clematis "grata," also several vases containing Roses, Cactus-flowered Pelargoniums, also fruiting branches of Grand Duke and The Monarch Plums, and of the Dartmouth Crab.

MESSRS. B. S. WILLIAMS & SON, Upper Holloway, sent sprays of autumn berries and coloured foliage, also vases of named varieties of perennial Asters. Among the berries we noticed the Sea Buckthorn, Hippophae rhamnoides, plentifully covered with its brightly coloured berries.

Mr. CHAS. TURNER, Slough, also brought a similar exhibit, showing many bright specimens of leaves and

berries, *Berberis stenophylla*, *Cotoneaster horizontalis*, *Hippophae rhamnoides*, *Cornus Spathii*, &c.

Messrs. BLACKMORE & LANGDON, Twerton Hill Nurseries, Bath, staged tuberous-rooting Begonias, the dwarf bedding kinds in baskets, and larger flowered varieties displayed on exhibition boards, all seedling varieties from beds in the open air (Bronze Flora Medal).

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, showed many pleasing flowers of herbaceous plants in vases—*Gladioli*, *Liliums*, *Tritomas*, &c. (Silver Banksian Medal).

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, staged a collection of perennial Asters in glass vases (Silver Banksian Medal).

Messrs. HARKNESS & CO., Hitchin, Herts, staged in addition to Roses a number of well-grown spikes of *Gladioli* in many excellent colours (Bronze Banksian Medal).

Mr. M. PRICHARD, Christchurch, Hants, staged hardly flowers, among which we noticed good spikes of *Heimerocallis* "Dr. Regel" (Silver Banksian Medal).

Messrs. BARR & SON, King Street, Covent Garden, presented many choice herbaceous species, including pans of well-flowered *Sternbergia macrantha*, *Gentiana Andrewsii*, *Aster linosyris*, &c. (Silver Banksian Medal).

Another large group of similar flowers was shown by Messrs. WM. CUTBUSH & SON, Highgate, N. An edging of pot-plants of *Shortia galacifolia* gave a pleasing finish to the group.

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, London, N., staged an extensive and showy group of hardy flowers, including several fine types of perennial Asters, among which was the variety, Perry's Favourite (see "Awards") and *A. linosyris*, *Pratia begoniaefolia* was shown in fruit. Mr. PERRY devoted considerable space to displaying varieties of *Sedum* spectabile.

Messrs. POLLARD BROS, Wantage Road Nursery, Lee, showed several new varieties of zonal Pelargoniums, including General Buller (salmon-scarlet), George Pollard, Alice Pollard, &c.

Bamboo epergnes containing flowers of Tree Carnations were displayed by Mr. H. MATTHIAS, Thames Ditton, Surrey.

Mr. DAVID RUSSELL, the Essex Nurseries, Brentwood, set up a collection of ornamental shrubs in pots. Messrs. JAS. VEITCH & SONS, Chelsea, showed hybrid streptocarpus in many handsome shades of colour and form.

ROSES.

Messrs. W. PAUL & SONS, Waltham Cross, occupied the whole length of one of the tables with over 150 varieties of Roses. Many of the flowers were shown in large clusters, fancy baskets being used to display the flowers, the whole making a fine effect. Of new varieties Earl of Warwick (H.T.), blush pink with a salmon shade, was good, and had the appearance of making a successful market Rose, being very free in flowering. Mrs. A. BYASS (decorative), flowers rosy-red, freely produced on strong growths; Irene, a white Caroline Testout, a most promising Rose; Dainty, rather small pale-yellow flowers, a good Rose for the garden; Arethusa, belonging to the China or Monthly Roses, soft primrose-yellow, the first of this shade in this class; Prince de Bulgarie, orange-coloured at the base, shading to pink, a pretty and distinct Rose (Silver-gilt Flora Medal).

Messrs. B. R. CANT & SONS, Colchester, arranged a collection of decorative Roses. The Maharajah (single crimson), which received an Award of Merit in June was well shown. Albert Stopford, Apotheker G. Hofer, Peace, and many of the best autumn-flowering Roses were included.

Mr. WILL TAYLER, of Hampton, made a good display of Teas, Hybrid Teas, and other decorative sorts, among which Gustave Regis, Mme. Pierre Cochet, Cramoie Supérieure, and others were prominent.

Messrs. R. HARKNESS & CO., Hitchin, had good bunches of many leading varieties. These were staged with a collection of *Gladioli* (Bronze Banksian Medal).

Messrs. GEO. JACKMAN & SONS, Woking, had flowers in forty-five vases and boxes representing the best autumn-flowering varieties of the different classes.

Mr. G. W. PIPER, of Uckfield, showed a fine lot of blooms of the varieties "Sunrise" and "Peace." The former is an excellent variety for market work.

DAHLIAS.

Mr. M. V. SEALE, Sevenoaks, staged a number of novelties, including Singles, also Pompons Enchance, Harbinger, &c., Show Dahlia Roy Seale, and the

following new Cactus varieties—Mrs. F. Trehawke Davies (bright pinkish-rose), Mrs. Harold Green (bright red), and Moonlight (creamy white, the centre sulphur).

Messrs. KEYNES, WILLIAMS & CO., Salisbury, had several novelties in Cactus Dahlias, among which were Rev. D. R. Williamson (crimson, shaded in the centre with dark-maroon), Morning Glow (yellow, the basal florets tipped with amber), and Admiral Togo (reddish terra-cotta). Several Pompons were also displayed by this firm, and the Show Dahlias Sulphurea (soft yellow) and Field Marshal.

HOBBIES, LTD. (John Green), Dereham, filled a space 40 feet in length with Cactus Dahlias in tall vases and in bamboo stands. Ornamental foliage was tastefully employed among the flowers. Among the varieties were Dorothy Vernon, Sirius, F. M. Stredwick, Conrad, Rainbow, Dainty, &c. (Silver Banksian Medal).

Messrs. CUTBUSH & SON, Highgate, filled a space at the north end of the Hall with an exhibit of Dahlias tastefully arranged. Cactus Dahlias were chiefly employed (Silver Flora Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, had an imposing bank of Dahlias, including vases of Cactus varieties in bunches. There was also a number of Single flowers on wire frames of such fine varieties as Snowdrop, Victoria, Formosa, Bessie Puck, and bunches of Pompon varieties (Silver Flora Medal).

Messrs. DOBBIE & CO., Rothesay, set up a group of Dahlias in vases, principally Cactus varieties. In addition there was a number of fine blooms on boards, bunches of Pompon varieties and single Cactus varieties, of which the best were Ivanhoe, Talisman, and Fenella (Silver Flora Medal).

Messrs. T. S. WARE, Ltd., Feltham, had a very effective arrangement of Dahlias of the Cactus type, arranged on tall bamboo-stands and in vases (Silver Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, had one of their characteristic collections of Cactus and Decorative Dahlias, including flat-petalled varieties, which find little favour with Dahlia specialists, also some varieties of what is known as the "Collette" type (Silver Flora Medal).

Mr. J. T. WEST, Tower Hill, Brentwood, brought a collection of Show varieties—Daniel Cornish, Virginal, Wm. Powell, &c.; also a collection of Pompon varieties, and some promising seedlings (Silver Flora Medal).

AWARDS OF MERIT.

Aster "Perry's Favourite."—This is a variety of perennial Aster or Michaelmas Daisy, with showy rosy-lilac-coloured flowers nearly an inch across. Shown by Mr. AMOS PERRY.

Clematis "grata."—A very beautiful Clematis bearing this name was exhibited by Messrs. W. & J. BROWN, of Peterborough and Stamford. The plants were trained to stakes several feet high, and bore a profusion of axillary racemes of pale-lavender-coloured flowers, passing to white. The plants shown were grafted ones, and had been cut down in the winter, consequently they were flowering on the young wood. It was stated that it is not necessary to cut them back, being hard-wooded; but good results followed either practice, and the plants are perfectly hardy. The compound leaves have five leaflets, ovate, acuminate, with serrated margins. The individual flowers are small, the petals being scarcely three-quarters of an inch long, and less than a quarter of an inch wide, very much recurved. The racemes are a foot long, and the flowers very numerous.

Colletia spinosa.—An old plant belonging to the order Rhamnaceae, introduced from Chili and Peru in 1823, and figured in the *Gardeners' Chronicle*, Nov. 17, 1877, p. 616. The small white flowers are produced in abundance, and are very fragrant. Excellent specimens from a tree growing for eight years past in a very exposed situation were shown by Mr. E. Beckett, from Lord ALDENHAM's garden at Aldenham House, Elstree.

Hydrangea Hortensis nivalis.—This variety has variegated leaves, each leaf having a broad, irregular band of white in the centre, and the stems are also quite white. The plants are very ornamental. Shown by Messrs. W. BULL & SONS.

Hypericum patulum var. *Henryi*.—A very free-flowering variety that apparently grows about 2 feet high. The flowers are nearly 3 inches across, and of golden-yellow colour. Shown by Messrs. R. VEITCH & SON, Exeter.

Dahlias.

The following varieties gained the Certificate of Merit of the National Dahlia Society, and the Award of Merit of the Royal Horticultural Society, unless any of the varieties had previously obtained either of these awards.

Cactus "Alexander."—Crimson overlaid with maroon; good centre. A valuable addition to the dark-coloured exhibition varieties, and of the most approved Cactus type. From Mr. S. MORTIMER, Farnham.

Cactus "Lord of the Manor."—Fiery-red; an improved Lyric. A bold and striking variety, valuable for exhibition purposes. From Mr. M. V. SEALE, Sevenoaks.

Cactus "Antelope."—Yellow; the basal petals suffused with bright salmon; one of the incurving or claw-shaped type; a pleasing shade of colour.

Cactus "Ella Krumer."—One of the most handsome varieties of the past two years; colour bright pink suffused with delicate rose. A charming exhibition variety. The two foregoing were from Messrs. J. STREDWICK & SON, Silverhill, Hastings.

Cactus "Cockatoo."—A beautiful variety of the approved Cactus type; bright yellow centre, the blush florets tinted with pinkish-amber colour. From Messrs. KEYNES, WILLIAMS & CO., Salisbury.

Cactus "Helen Stephens."—Pure soft yellow with incurved, claw-like florets; an excellent addition to the yellow varieties; good centre and outline.

Cactus "Harbour Lights."—Yellow ground suffused and tipped with bright ruby-crimson; a showy and effective variety. The two foregoing were from HOBBIES & CO. (John Green), Dereham.

Pompon Dahlia "Little Mary."—A perfect model in petal and shape; in colour dark crimson; the best new Pompon of the present year. From Mr. M. V. SEALE.

Pompon "Nautness."—Delicate salmon with yellow centre, slightly stained with lilac-pink; flower compact and of good shape. From Mr. J. T. WEST, Brentwood.

Single Dahlia "Dorothy."—White with side margins of light rosy-purple; excellent form and quite distinct. From Messrs. J. CHEAL & SONS, Crawley.

Single Dahlia "Miss Bastone."—White with side margins of soft yellow; a beautiful and delicate variety; may be regarded as an improved "Dearest."

Single Dahlia "The Mikado."—Has a zone of red colour round the yellow eye, and a broad margin of bright yellow; a distinct variety of the finest form and substance.

Single Dahlia "Unique."—Has a slight crimson zone, and a broad margin of dark amber colour; quite unique in character. The foregoing three varieties were from Mr. M. V. SEALE.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); Baron Schroeder, Jas. O'Brien (Hon. Sec.), DeB. Crawshaw, J. Colman, F. Wellesley, J. W. Potter, R. G. Thwaites, H. Little, A. A. McBean, H. M. Pollett, W. H. Young, W. Boxall, H. A. Tracey, G. F. Moore, F. W. Ashton, W. A. Bilney, T. W. Bond, W. Cobb, H. Ballantine, F. J. Thorne, and J. Charlesworth.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured the highest award, a Silver-gilt Flora Medal, for a very fine group of rare and exceptionally well-grown Orchids. Two features in the group were very prominent, viz., the superb *Odontoglossum crispum* xanthotes Charlesworthii (see Awards) and the beautiful batch of most dissimilar varieties of *Cattleya* x *Iris*, two of which secured awards. The flowers varied in the colour of the sepals and petals from bronzy-yellow to lilac-purple, the labellums also varying from rich ruby-red to purple. Six fine forms of *Laelio-Cattleya* Haroldiana, several good L.-C. x *callistoglossa*, L.-C. x *Mandarin* (L. *crispa* x C. *Schofieldiana*) with very singularly-marked flowers, a large form of L.-C. x *Madame Chas. Maron*, *Cattleya* x *Chamberlainiana*, C. x *Vulcan*, *Miltonia* x *Bleuana*, M. x *Binotii*, and others were also represented; a small plant of the new *Cypripedium glaucophyllum* (which promises well) and two specimens of *Odontoglossum grande* with eight and nine flowers on a spike being also shown.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for a fine group of hybrids, in which eighteen plants of *Laelio-Cattleya* x *blechleyensis* varying much in colour were included. One form had a very showy and richly-coloured labellum. Other good varieties noted were L.-C. x *Dighyano-Warszewiczii*, L.-C. x *Nysa* (several good forms), L.-C. x

Callistoglossa ignescens, L.-C. × *Wellsiana*, L.-C. × *Robin Measures*, L.-C. × *Haroldiana*, L.-C. × *Hermione*, *Cattleya* × *Pittiana*, and *C.* × *Casca* (*Gaskelliana* × *velutina*), a singular lilac-tinted flower.

Messrs. SANDER & SONS, St. Albans, secured a Silver Flora Medal for a fine group, principally hybrids. Among them were a selection of good varieties of *Lælio-Cattleya* × *bletchleyensis*, L.-C. × *Canhamiana*, L.-C. × *eximia*, *Cattleya* × *Boadicea* (*Hardyana* × *Gaskelliana*), with good, richly-coloured flowers; *C.* × *Maronii*; the new *Cypripedium* × *Prince Humbert* (*niveum* × *Mastersianum*), with wax-like white flowers bearing dotted purple lines; *C.* × *Annie Measures*, *C.* × *Elmireanum*, *C.* × *Hayetti*, *C.* × *Aetæus*, *C.* × *Persephone*, *C.* × *Wm. Matthews*, varieties of *C.* × *insigne*, and a good plant of *Zygopetalum Klabodorum*, with four flowers.

The Hon. WALTER ROTHSCHILD, Tring Park (gr., Mr. A. Dye), was awarded a Silver Banksian Medal for an interesting group, in which were the remarkable *Angræcum Rothschildianum* and *A. infundibulare*; *Masdevallia macrura*, and variety *maxima*; varieties of *M. chimera*, *M. Troglodytes*, *M. Peristeria*, *M. Wagneriana*, *M. Carderi*, *M. muscosa*, *M. Wendlandiana*, a number of pretty hybrid *Masdevallias*, *Restrepia maculata*, *sanguinea*, and *aspasicensium*; four species of *Scaphosepalum*, *Lælio-Cattleya* × *Hermione*, L.-C. × *Bryan*, *Cattleya Minerva*, and the rich orange-tipped *C. aurea*, Tring Park variety.

H. S. GOODSON, Esq., Fair Lawn, West Hill, Putney (gr., Mr. G. E. Day), was awarded a Silver Banksian Medal for a very representative group, both of species and hybrids. Among them were three very good forms of *Lælio-Cattleya* × *elegans*, the best being Goodson's variety, a fine flower with an intense ruby-purple labellum. Other good hybrids were L.-C. × *bletchleyensis*, two fine L.-C. × *Gottoliana*, *Cattleya* × *Pittiana*, and a number of hybrid *Cypripediums*. The species and varieties included two specimens of the best form of *Lycaste Skinneri alba*, a batch of *Cypripedium Spicerianum*, *C. purpuratum* and a natural hybrid of it, and, probably, *C. barbatum*; *Odontoglossum crispum*, *O. grande*, two good *Cattleya Dowiana*, *C. Eldorado alba*, *C. bicolor*, and the singular *Polystachya luteola*.

Messrs. HUGH LOW & Co., Enfield, staged a group in the centre of which was a very fine specimen of *Cattleya bicolor* with six spikes, bearing together thirty-four flowers, and on each side of it smaller plants of the larger-flowered variety *Grossii*. At one end was a number of finely-flowered *Dendrobium formosum*, and other species remarked were *Zygopetalum maxillare*, *Oncidium microchilum*, *O. Forbesii*, several good *Cattleya Gaskelliana*, *Dendrobium Phalenopsis*, *Cattleya Luddemanniana striata*, &c.

Mr. JAS. CYPRIER, Cheltenham, staged a small group in which were three finely-flowered specimens of *Rodriguezia* (*Burlingtonia*) *candida*, each with about thirty long racemes of pretty white fragrant flowers. With them were the handsome *Cypripedium* × *Mrs. Herbert Druce* (*niveum* × *bellatulum*), with fine white flower profusely spotted with purple, much larger than *C. niveum*; and the beautiful emerald-green and white *C. × Maudiae*.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed the pretty *Lælio-Cattleya* × *Constance Wigan* (see Awards); the bright rose-coloured *Sophro-Cattleya* × *Chamberlainiana*, Wigan's variety; the handsome *Miltonia vexillaria Leopoldii*, and *Cattleya* × *Parthenia Prince of Wales*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cypripedium* × *Shawianum* *magnificum*, a fine Lawrenceanum cross with white dorsal sepal tinted with rose, and bearing dark-coloured lines; petals greenish with rose tips and raised dark chocolate spots. Mr. WELLESLEY also showed a fine *Cattleya* × *Maronii splendens* with seven flowers on a spike; and the beautiful and fragrant *Cattleya* × *Lady Ingram*, Westfield variety, with five flowers on the spike; both specimens highly creditable to the grower.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard), showed his *Lælio-Cattleya* × *elegans* *Littleiana*, for which he received a First-class Certificate, August 25, 1885, a very richly-coloured variety.

MALCOLM S. COOKE, Esq., Kingston Hill, showed a fine *Lælio-Cattleya* × *elegans*.

JEREMIAH COLMAN, Esq., Gattton Park (gr., Mr. W. P. Bound), sent *Cattleya* × *intermedio-Warszewiczii* with pretty rose-pink flowers of good substance, and yellow base to the lip.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum xanthotes Charlesworthii, from Messrs. CHARLESWORTH & Co., Heaton, Bradford.—A grand pure white flower, with cluster of eight to ten clear chrome-yellow spots on the sepals, and generally one to three spots of the same clear yellow colour on the petals. The crimped labellum had a light-yellow-coloured disc, with one or two chrome-yellow blotches in front of the crest and some short lines of yellow on each side. It is by far the best of its class which has yet appeared. The spike bore eight flowers.

AWARDS OF MERIT.

Angræcum Rothschildianum, from the Hon. WALTER ROTHSCHILD.—The very remarkable species from the Victoria Nyanza, described and figured in the *Gardeners' Chronicle*, 1903, August 22, p. 131. The raceme bore very remarkable white flowers, with bright emerald-green disc and violet-purple base to the lip.

Lælio-Cattleya × *Constance Wigan* (*L. xanthina* × *C. Rex*) from Sir FREDERICK WIGAN, Bart. (gr. Mr. W. H. Young).—A pretty hybrid with clear yellow-coloured flowers with light-purplish markings at the base and blotch on the front of the lip.

Cattleya × *Iris* var. *aurifera* (*bicolor* × *aurea*), from Messrs. CHARLESWORTH.—Sepals and petals golden-yellow with a slight greenish tinge; lip, glowing ruby-purple.

Cattleya × *Iris Prince of Piedmont*, from Messrs. CHARLESWORTH.—Sepals and petals bronzy-yellow with a purple tinge; base of lip claret colour with orange showing beneath, front of lip rich, velvety reddish purple.

Lælio-Cattleya × *eximia Sanders' variety* (*C. Warnerii* × *L. purpurata*), from Messrs. SANDER & SON. A noble flower, large and of fine proportions. Sepals and petals purplish-rose, the broad, finely-expanded labellum ruby-red, with a purple tinge towards the finely-crimped margin, and darker veining.

CULTURAL COMMENDATION.

To Mr. A. Dye, gr. to the Right Hon. Lord ROTHSCHILD, for a finely-grown plant of the remarkable *Angræcum infundibulare*, illustrated in the *Gardeners' Chronicle*, August 20, 1904.

To Mr. JAS. CYPRIER, Cheltenham, for profusely-flowered *Rodriguezia candida*.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman); and Messrs. H. Somers Rivers, A. H. Pearson, W. Pount, Geo. Wythes, J. Jaques, W. H. Divers, G. Norman, G. Reynolds, F. Q. Lane, P. C. M. Veitch, E. Beckett, W. Fyfe, Geo. Kelf, A. Dean, W. Pope, J. H. Veitch, Owen Thomas, H. Parr, H. Markham, Jos. Cheal, and S. Mortimer.

A noteworthy exhibit of vegetables was staged by Lord ALDENHAM, Elstree, Herts (gr., Mr. Beckett). The collection occupied the whole of one of the sides of the centre tables, which was filled with magnificent vegetables of all descriptions. Onions were especially good, and included large, solid, well-shaped bulbs of the varieties *Record* and *Excelsior*, *Ailsa Craig*, &c.; Parsnips and Carrots were perfect. There were also Peas, Beans, Marrows, Broccoli, Celery, Cabbages, Potatoes, Tomatoes, &c. *Crimson Ball Beet* was excellent; *Holborn Model Leeks*, *Carter's Improved Maize*, *Gladstone Pea*, *Crimson Globe Onions*, *Veitch's Autumn Giant Cauliflower*, and *Potatoes King Edward VII.*, *Up-to-Date*, &c., are but a few of the vegetables in this highly meritorious group (Gold Medal). Lord ALDENHAM also received a Cultural Commendation for heads of Celery "*Aldenham Pink Perfection*."

A good exhibit of Apples and Pears was staged by Messrs. JOHN FEED & SON, West Norwood, London, S.E. The collection generally was comprised of well-grown fruits, many of the varieties being highly coloured. Among the Apples were excellent examples of *Tyler's Kernel*, *Bismarck*, *Peasgood's Nonsuch*, *The Queen*, *Allington Pippin*, *Ribston Pippin*, *Warner's King*, *Gascoigne's Scarlet Seedling* (very good), &c. Of Pears, we noticed good dishes of *Souvenir du Congrès*, *Louise Bonne* of Jersey, *Marguerite Marillat*, *Brookworth Park*, &c. (Silver Knightian Medal).

MESSRS. JAS. VEITCH & SONS, Chelsea, staged a collection of fruiting stems of Tomatoes grown in the open, demonstrating the cropping qualities of the individual

varieties exhibited. Many of the haulms were carrying five bunches of fruits, some kinds averaging a dozen Tomatoes in a bunch. Conference, Frogmore Selected, Ham Green Favourite, and *Perfection*, all well-known varieties, were among the best. Some dishes of *Runner Bean* "*Hackwood Park Success*," to show its setting and cropping qualities, and the new *Marrow*, *Defiance*, were also shown by the same firm. Messrs. Jas. Veitch & Sons had also nine excellent pot-vines carrying Grapes. The plants were struck from "eyes" early in 1903, and had made wood almost an inch in diameter. The varieties shown were *Buckland Sweetwater*, *Black Hamburg*, *Black Alicante*, *Foster's Seedling*, *Gros Maroc*, and *Madresfield Court* (Silver Knightian Medal).

A collection of Plums was staged by the Duke of RUTLAND, Belvoir Castle, Grantham (gr., Mr. W. H. Divers). This was a representative collection, including *Magnum Bonum* (excellent examples), *Pond's Seedling*, *River's Late Orange*, *Golden Transparent*, *Archduke*, *Reine Claude Comte Althan*, *Cox's Emperor*, *Reine Claude de Bavay*, &c. (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, showed several types of Savoys, Cabbages, Kale — *Tarragon Kale*, dwarf purple *Kale*, &c.

Messrs. HARRISON & SONS, Market Place, Leicester, received a Bronze Banksian Medal for a collection of Tomatoes.

Seedling varieties of Apples came from Mr. F. HARPER, 4, Longton Road, Stone, Staffs; Miss M. E. HITCHCOCK, Bay Lodge, Danbury, Chelmsford; Mr. W. JEFFRIES, Red Rice, Andover, Hants; and Mr. T. CHARLES, Histon, Cambs, &c.

A highly-coloured Peach, the colour running through the flesh, came from Lady FREDERICK FITZ-ROY, Balcombe, Sussex. Unfortunately the flavour was not so remarkable as the colour.

Mr. WILLIAM ALDRIDGE, Teddington, staged a white Grape named *Edith Seedling*.

The Duke of RUTLAND, Belvoir Castle, Grantham (gr., Mr. W. H. Divers), sent a new seedling Plum.

A huge example of *Warner's King Apple*, weighing 26½ oz., was shown by Mr. W. T. MATTOCK, Blenheim Nursery, Headington, Oxford.

A new Peach named *St. Edmunds* came from Mr. T. STIRLING, The Gardens, Silvermore Park, Bury St. Edmunds.

Tubers of *Potato Eldorado* were shown by Mr. CHAS. BLICK, Hayes, Kent. Second-growth tubers were included, which exhibited different characters from the type, the latter having a pronounced russet skin, which was lacking in those of the second growth (Cultural Commendation).

AWARDS OF MERIT.

Apple "Rev. W. Wilks."—This is a large culinary variety, shown by Messrs. JAS. VEITCH & SONS, which they obtained from a cross between the varieties *Peasgood's Nonsuch* and *Ribston Pippin*. It has a pale greenish-yellow-coloured skin, marked sparsely with minute red and brown spots. The stem is less than an inch long, very thick, and is inserted in an uncommonly deep and furrowed cavity. The eye is closed, has long segments, and is inserted in a deep cavity slightly channelled in four or five places. The fruit most resembles that of *Peasgood's Nonsuch*, but it is difficult to observe in it any likeness to *Ribston Pippin*.

Crab, "Veitch's Scarlet."—This ornamental Crab was obtained by Messrs. JAS. VEITCH & SONS from a cross between *Red Siberian* and *Apple King of the Pippins*. The fruits are of very deep, globular shape, and in colour vary from bright red to deep crimson.

Crab "Frettingham's Victoria."—A much flatter fruit than the variety described above. The skin is of brighter red colour, and is very decorative. Shown by Mr. W. H. FRETTINGHAM, Beeston Nurseries, Notts.

Strawberry "Euthrope Perpetual."—This is a free-fruited perpetual variety, said to have been raised from *St. Antoine de Padoue* crossed with another variety. The fruits are larger than those of *St. Antoine de Padoue*, and of superior flavour. Being still in flower, it should prove an excellent variety for affording late fruits. Shown by Miss ALICE DE ROTHSCHILD, Eythrope, Bucks (gr., Mr. Gibbs).

Lecture on Roses.

In the afternoon a lecture on "Ways of Employing Roses in Garden Decoration," illustrated by lantern-slides, was delivered by Mr. GEO. GORDON, V.M.H. Mr. GORDON said it was necessary to cultivate Roses in a particular manner, according to the purpose for which

they were employed. The methods adopted by the cultivator who desired to obtain flowers for exhibition purposes were all very well in their way, but would not answer at all for the purpose of decorating the garden. Lantern-slides were then shown, which illustrated Roses growing as standard plants, Roses in groups, on banks, as festoons, on pergolas, upon arches, around pillars, over other vegetation as in a wilderness, and in beds and borders. A few remarks were made upon certain varieties that are best fitted for culture in the methods illustrated; and Mr. GORDON specially advised his audience in the selection of varieties for standard plants to avoid using exhibition Roses that would not develop good "tops." Such varieties as *Thalia* and the *Aryshire Rambler*, amongst others, would afford better results.

NATIONAL ROSE.

A COMPETITIVE show was held in conjunction with the Royal Horticultural Society's meeting in the new Hall on Tuesday last. Entries were numerous in the different classes, and though in most instances the foliage was affected by mildew and the blooms had somewhat an autumnal appearance, there were many good exhibits. Hybrid Teas were the feature of the show.

For thirty-six Blooms, distinct, Mr. HUGH DICKSON, of Belfast, took 1st prize with excellent blooms, consisting chiefly of Hybrid Teas. The varieties Hugh Dickson, a fine crimson (this flower was awarded the Society's Silver Medal); *Marquise Litta*, *White Lady*, *Marchioness of Londonderry*, and *Ulrich Brunner* were specially good. 2nd prize, Messrs. JAMES COCKER & SONS, Aberdeen, who had also a good collection of blooms. 3rd, Messrs. JNO. JEFFERIES & SONS, of Cirencester. There were seven entries in this class.

Eighteen Blooms, distinct.—The 1st prize was won by Messrs. FRANK CANT & Co., Colchester, with high-class blooms. The varieties, *Ernest Metz*, *Sylph*, and *Mrs. E. Mawley* were especially conspicuous. 2nd, Mr. GEO. PRINCE, Longworth, Berks. 3rd, Messrs. JNO. JEFFERIES & SONS, Cirencester.

Twelve distinct varieties, seven Blooms of each variety.—Mr. G. PRINCE, Longworth, was 1st, with the varieties *Caroline Testout*, *Mildred Grant*, *Mrs. E. Mawley*, *Frau Karl Druschki*, *Marie Van Houtte*, and others. Messrs. ALEX. DICKSON & SONS, Newtownards, Belfast, were 2nd, in whose exhibit the blooms of *Mildred Grant* were awarded the Society's Silver Medal. Messrs. FRANK CANT & Co. and Messrs. JNO. JEFFERIES & SONS were awarded equal 3rd prizes. There were five exhibits in this class.

Twelve Blooms of any one variety shown in a Vase.—The 1st prize was awarded to Mr. HUGH DICKSON for good examples of *J. B. Clarke*, the variety awarded the Society's Gold Medal. 2nd, Messrs. JAMES COCKER & SON, Aberdeen, with *Frau Karl Druschki*. 3rd, Messrs. FRANK CANT & Co.

Thirty-six distinct (Garden) varieties in Bunches.—This was an interesting class, all the exhibits being of a high standard of merit. Messrs. F. CANT & Co., Colchester, were 1st, their exhibit including fine examples of *Marquis of Salisbury*, *Perle d'Or*, *Queen Mab*, *Rainbow*, *Corallina* (also shown well in several other classes), *Madame Pernet Ducher*, *Augustine Guinoisseau*, &c. Mr. J. MATTOCK, New Headington, Oxon, gained 2nd prize with showy blooms, the varieties *Clara Watson*, *Killarney*, *Irish Glory*, and *Lady Battersea*, being among the best. 3rd, Mr. CH. TURNER.

Group of Plants in Pots and Cut Blooms.—Messrs. PAUL & SON, Old Nurseries, Cheslunt, were 1st with a good selection of plants and cut flowers. Mr. C. TURNER, 2nd; and Mr. G. PRINCE and Mr. G. MOUNT, of Canterbury, were placed equal 3rd, with exhibits consisting of cut blooms only.

Bowl of China Roses, with China Rose foliage only. Several good exhibits were made in this class, and the 1st prize was won by Mr. J. MATTOCK, Headington, Oxon, with the variety *Queen Mab*.

GOLD MEDAL ROSES.

Among new varieties were two which gained the Gold Medal. Mr. HUGH DICKSON, of Belfast, secured one of these with fine blooms of "*J. B. Clarke*," of rich crimson colour, with a bright purple shade, paler at the base of the petals.

Messrs. ALEX. DICKSON & SONS, Newtownards, secured a similar award for a single variety "*Irish Harmony*," of pale primrose colour, with a free flowering habit.

AMATEUR CLASSES.

The Rev. F. BURNSIDE won the Society's Silver Medal for the best Tea Rose with *White Maman Cochet*; and the Rev. J. H. PEMBERTON secured a similar award for excellent blooms of *Frau Karl Druschki*.

Other successful exhibitors were Mr. A. EVANS, Marston, Oxon, for best nine blooms; Mr. OSMOND G. ORPEN, West Bergholt, Colchester, for twelve best blooms. Mr. CONWAY JONES was 2nd in this class. For six blooms Mr. R. W. BOWYER, Hertford Heath,

took 1st prize; and Mr. G. A. HAMMOND, Cambrian House, Burgess Hill, was a good 2nd. Mr. C. C. WILLIAMSON, of Canterbury, was 3rd.

In the class for six varieties, five blooms of each variety, the Rev. J. H. PEMBERTON was 1st; and Mr. OSMOND G. ORPEN, 2nd.

For four varieties, five blooms of each variety, the Rev. J. H. PEMBERTON was 1st; and Mr. CONWAY JONES, 2nd.

In the Ladies' Classes, Miss J. LANGDON took 1st prize for a bowl of cut Roses; Mrs. O. G. ORPEN, 2nd; and BERTHA T. MAWLEY, 3rd. There were six entries in this class.

For a basket of Roses, Mr. C. C. WILLIAMSON was 1st; Mrs. O. G. ORPEN, 2nd; and Miss J. LANGDON, 3rd. There were four entries.

For twelve varieties of blooms, not fewer than three trusses of each variety, Mr. A. TATE, Downside, Leatherhead, took 1st prize; and Mr. OSMOND G. ORPEN, 2nd prize.

In a class for six distinct varieties, not fewer than six trusses of each, the Rev. J. H. PEMBERTON was 1st; and Mr. C. S. GORDON CLARK, Leatherhead, 2nd.

LONDON DAHLIA UNION.

SEPTEMBER 15, 16.—This Society held its annual show in the buildings of the Earl's Court Exhibition, West Kensington, on the above dates, when a choice display of these autumn flowers was made. The show was enhanced by several really fine non-competitive exhibits contributed by members of the trade. The Amateur section was not as strongly represented as at the Crystal Palace on the 2nd inst, but in most of the Open classes competition was keen, particularly in that for twelve varieties of *Cactus Dahlias* in Class 10.

OPEN CLASSES.

For the best display of *Cactus Dahlias*, arranged on a space of tabling 12 feet by 6 feet, interspersed with any kind of foliage, Ferns, or Grasses, there were two competitors, Mr. M. V. SEALE, Sevenoaks, taking 1st prize with a well-arranged exhibit comprised of well-grown flowers, tastefully arranged with pretty foliage and autumn berries. Three tall Bamboo epergnes were arranged in the centre, around which were grouped vases, flower-holders, &c. The group arranged by Messrs. J. CHEAL & SONS, Crawley, was also very attractive, and was awarded 2nd prize.

For six Vases of distinct *Cactus varieties*, three blooms of each variety in a bunch, arranged with suitable foliage, &c., Mr. S. MORTIMER, Farnham, Surrey, was 1st, with *Manxman*, *Percy Mortimer*, *Mrs. John Barker*, excellent flowers; *Mrs. H. L. Brousson*, *Clara*, *G. Stredwick*, and *Winsome*. Messrs. CHEAL & SONS were 2nd; and Mr. J. WALKER, Thame, 3rd.

Three Vases of *Cactus Dahlias*, distinct varieties, exhibited for the first time in 1903, six blooms of each variety, brought five competitors. Mr. M. V. SEALE taking 1st place with *Osprey* (yellow ground with claret-coloured stripings), *Rainbow* (pink with lighter centre), and *Mavis* (a light bronze); berries and foliage gave a pleasing finish; Messrs. KEYNES, WILLIAMS & Co., Salisbury, were 2nd, *Dainty* being an aptly named variety and shown well; Messrs. CHEAL & SONS, Crawley, 3rd.

For six bunches of *Pompon Cactus varieties*, arranged with their own foliage, Mr. JOHN WALKER, Thame, was 1st, having small excellently-shaped examples—*Coronation* (a handsome scarlet) and *Purple Gem* were very meritorious. Mr. SEALE, Sevenoaks, was 2nd.

There was also good competition in the Amateur class for four varieties—three blooms of each variety.

SHOW AND FANCY VARIETIES.

For twenty-four Blooms, distinct, there were four competitors, Mr. J. WALKER, Thame, being placed 1st, with the varieties *Maud Fellowes*, *Mrs. Langtry* (hand-some flower), *Scraph*, *Duchess of Albany*, *Wm. Rawlings*, *Golden Gem*, *Cheftain*, *Wm. Powell*, *Duke of Fife*, *John Hitching*, *Emin Pasha*, *Imperial Rosamond*, *Arthur Rawlings*, *Fred Smith*, *Mrs. W. Slack*, *Mr. Chamberlain*, *R. T. Rawlings* (yellow), *Dante*, and *Goldsmith*. 2nd, Mr. MORTIMER, Farnham; 3rd, Messrs. KEYNES, WILLIAMS & Co., Salisbury.

In the Class for twelve Blooms there were five entries. Mr. E. WEST, Junr., The Laurels, Henley-on-Thames, taking 1st prize with large and well-formed flowers. Mr. WEST also took 1st prize for twelve blooms distinct, in the Amateur classes.

CACTUS DAHLIAS.

Class 10 for twelve Varieties, in bunches of six blooms in each bunch. There was strong competition, Messrs. J. STREDWICK & SONS being 1st with some grand flowers of the varieties *H. J. Jones*, *Ella Kraemar*, *Alfred Morgan* (lovely dark scarlet), *Antelope*, *H. F. Robertson*, *J. B. Riding*, *Lady Colin Campbell*, *Sir A. Lamb*, *F. M. Stredwick*, *Pearl*, *Columbia*, *Fairy*. Messrs. CHEAL & SONS, Crawley, 2nd; Mr. H. SHOESMITH, Woking, 3rd.

For twenty-four Varieties, distinct, Messrs. KEYNES, WILLIAMS & Co., Salisbury, were 1st, taking a similar place in the class for twelve distinct blooms.

MISCELLANEOUS EXHIBITS.

Messrs. H. CANNELL & SONS, Swanley, Kent, staged an exhibit of *Cactus Dahlias* tastefully staged in vases interspersed with suitable foliage (Gold Medal). Mr. A. L. GWILLIM, New Eltham, Kent, set up a collection of flowers of tuberous-rooting *Begonias* (Gold Medal). HOBBIES, Ltd., Norfolk Nurseries, Dereham, had an extensive group of *Cactus Dahlias* the flowers being arranged in vases, epergnes, &c. (Gold Medal). Mr. J. T. WEST, Tower Hill, Brentwood, had vases and boxes of *Cactus*, *Show*, and *Pompon* varieties of *Dahlia* (Gold Medal). Messrs. BAKER, Ltd., The Old Hall Nurseries, Codsall, Staffs, arranged a pretty exhibit of *Cactus*, *Show*, and *Pompon* *Dahlias*, using fancy baskets, epergnes, vases, &c., for their display (Gold Medal). Messrs. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, London, had an exhibit of *Dahlias* and other flowers (Gold Medal). A miscellaneous collection of herbaceous flowers, *Dahlias*, &c., was arranged by Mr. ERIC F. SUCH, Maidenhead (Silver-gilt Medal). Mr. W. SEWARD, Hanwell, Middlesex, showed fruiting rods of his *Tomato*, *Hanwell Victory*. Messrs. JOHN PEED & SON, West Norwood, London, furnished a table with choice fruits of *Apples* and *Pears* in baskets, dishes, &c., set off with a number of foliage plants (Silver-gilt Medal). Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, set up a choice collection of spikes of *Gladioli* (Gold Medal). Messrs. S. SPOONER & SONS, Hounslow Nurseries, Middlesex, staged a collection of *Apples*, *Pears*, and *Plums* (Gold Medal).

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 19.—The first meeting of the Floral Committee took place at the Essex Hall, Strand, on the above date, the only contribution coming before the Floral Committee being four early large-flowering Japanese varieties from Mr. C. PENFORD, The Gardens, Leigh Park, Havant. A First-class Certificate of Merit was awarded to a variety having broad massive florets of a clear yellow colour, deeper in the centre, bearing the name of *Leigh Park Rival*; this promises to be a valuable addition to the October, large-flowering, Japanese varieties. *George Hutchinson*, bright ruby-crimson with an old-gold reverse, is a fine and attractive variety, but not being sufficiently developed, the Committee wished to see it again. *Eclipse* is a large incurved Japanese of rosy-amaranth colour with silvery reverse—decidedly promising. *A. Payne* is of a pale rosy-salmon, with amber reverse and deep yellow centre.

LONGTON DAHLIA AND HORTICULTURAL SHOW.

THIS Society was established during the past summer in the interests of the working men in Longton (Staffs.), who in their spare time cultivate flowers, fruit, vegetables, &c. *Dahlias* being a favourite flower with them, a *Dahlia* exhibition was organised, which took place recently in the Town Hall, Longton. *Dahlias* were then exhibited in considerable extent and good quality, these men of the Staffordshire Potteries exhibiting blooms of *Show Dahlias* which would have done credit at the National Dahlia Society's show. The large rounded *Show Dahlia* is their especial favourite, and the size, combined with the refinement and quality of the blooms, showed the care taken by cultivators. There was keen competition in all the classes for *Dahlias*, in one class for six blooms as many as thirteen prizes were awarded. Good blooms of the *Cactus* type were shown on boards. When exhibited in bunches the somewhat crude method of staging the blooms detracted from their appearance. Better success was attained with *Cactus Dahlias* in bunches shown with foliage. Some *Pompon Dahlias* were shown; also plants in pots of the *Pompon* and *Cactus* types. Excellent vegetables grown in Longton gardens filled one large table, showing intelligent cultivation. Some of the Onions were especially fine. Various plants were also staged.

GARDENERS' DEBATING SOCIETIES.

REDHILL AND REIGATE GARDENERS.—This association held its second annual meeting on September 12, Mr. Bound in the chair. The Secretary read an encouraging Report of the year's work, showing that the society had a balance to its credit of £25 4s. 9d. Mr. Rose, senr., was elected Secretary for the coming year, and a vote of thanks accorded the late Secretary for his past services. Mr. Jeremiah Colman, J.P., was elected President; Mr. Bound, Chairman; Mr. F. W. Taylor, Treasurer; and Mr. Jenner, Librarian. Rule 3 was amended, and a new rule added. Mr. Seman presented the Report of the Library Committee. The average attendance at the meetings for the year was eighty. J. W. B.

LEEDS PAXTON SOCIETY.—The ordinary weekly meeting of the above was held on September 17, when Mr. Gaut, of the Yorkshire College, read a paper entitled, "Notes and Observations of the Year." These notes, gathered over a wide area, were of an instructive character, touching on almost every phase of gardening, including remarks on the newly-formed British Gardeners' Association, of which Mr. Gaut is a very powerful advocate.

ANSWERS TO CORRESPONDENTS.

APPLE "JAMES GRIEVE": *Old Reader*. We are informed that this dessert Apple was raised and distributed originally by Messrs. Dicksons & Co., Waterloo Place, Edinburgh, and was named after their late manager. It is stated in the *Journal of the Royal Horticultural Society*, 1897-1898, vol. xxi, p. cxvii, that the variety was raised from seed of Cox's Orange Pippin, and, as was stated on p. 196, the Fruit and Vegetable Committee of the Royal Horticultural Society unanimously granted it an Award of Merit on October 12, 1897, when fruits were exhibited by Messrs. Bunyard & Co., Maidstone.

APPLE-TREE AND ROOTS: *J. P.* The portions of root and branches of standard Apple-tree, and portion of soil sent, show the cause of mischief. The soil is full of white mycelium, and the branch is traversed beneath the bark with the black cord-like growth of Rhizomorpha, which proceeds upwards from the ground, and probably from some such Agaric as *Armillaria mellea*. Better, as you suggest, burn the whole tree, trench up the soil, and kill all the white mycelium. Plant nothing in the soil until the fungus is killed out of it. All roots and decayed wood must be carefully got out of the soil. The canker spots are permeated by the mycelium, and profusely show the development of the conidia belonging to *Nectria ditissima*. Probably this has followed the weakening of the tree by the root fungi. Either is sufficient to cause the mischief.

BATH FLORAL FETE: *Correspondent*. Many thanks for informing us that the 1st prize for twelve vases of Roses at the Bath show was awarded to Messrs. Jno. Jefferies & Son, Cirencester.

BEGONIA GLOIRE DE LORRAINE: *G. H.* This hybrid was raised by M. Lemoine, of Nancy, France, from a cross between *Begonia Dregei* and *B. socotrana*.—*Journeymen*. It is possible to have *Begonia Gloire de Lorraine* and *B. "Turnford Hall"* in flower in April; but as the plants will have flowered twice in six months it cannot be expected that at the second time they will produce as good a supply of flowers as plants blooming at Christmas. The plants having been cut over will be much shorter, and the flowers small.

BOOKS: *Reader*. We do not know of such a book.

CUCUMBER LEAF DISEASE: *G. Bethel*. The spots certainly contain hyphae and conidia of *Cercospora melonis* in active condition.

DISEASED MELONS: *G. C. M.* The young Melons about the size of Walnuts show raised, discoloured blotches, almost circular, and from an eighth to a quarter of an inch in diameter. There appears to be a delicate mycelium, but the pustules are evidently not mature, as there are no spores, although the disease appears to be fungoid. Are there no spots on the leaves, as this may be the *Cercospora* which has attacked the fruits? Pick off the diseased fruits and burn them, and spray the plants with a diluted harmless fungicide, such as Condy's fluid. Watch for any further development.

FRENCH AND BELGIAN HORTICULTURAL JOURNALS: *D. F.* *Le Jardin*, 84, bis Rue de Grenelle, Paris; *Journal des Roses*, 62, Rue des Ecoles, Paris; *Revue Horticole*, 26, Rue Jacob, Paris; *Le Moniteur d'Horticulture*, 14, Rue de Sevres, Paris; *Revue de l'Horticulture Belge*, 23, Rue du Calvaire, Gand. You should write to the respective Publishers (Editeurs) for particulars as to subscriptions for this country.

LATE-RIPENING PEACHES: *D. Field*. You do not say if the Peaches are intended for cultivation under glass, but we will suppose that they are, and that you will not employ artificial heat at any time. The writer grows several varieties for ripening late on walls in the open, such as Sea Eagle, Nectarine Peach, Walburton Admirable, Princess of Wales, Barrington, and Devonian. Owing to the hot weather we have had, most of these varieties are now approaching ripeness. In some seasons they are much later than they are this year. The only really late Peach for ripening in October is that of

Golden Eagle, which has yellow flesh. This variety will not be really fit for market for at least another month or six weeks. Gladstone is another rather late variety, but not so late as Golden Eagle. Golden Eagle is a strong grower, and soon covers a considerable space. It is also a good "setter," and with judicious thinning the fruits grow to a very large size. If afforded a little heat during bad weather in the autumn the fruits are really grand.

LEAF: *Kingstown*. It is impossible to say what is the matter with the shrivelled leaf, and no information of any kind was supplied us.

MILLEPEDES IN POTATOS: *H. F. N., Warlingham*. *Julus pulchellus*, the commonest and most destructive of our indigenous millepedes. This pest often swarms in garden refuse-heaps, especially when mixed with stable-manure; and where such manure is used in the garden, infestation will be carried with it. Give the land a good dressing of soot, and trench it as soon as possible, taking care at the same time to remove all tubers, whether healthy or decayed. Any that are decayed should be burned. Slices of Mangold or Beet form an excellent bait for millepedes, but if used should be examined frequently and all the millepedes destroyed.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—*G. F. H.* The Apple named "Gooseberry Pippin" in last week's issue should have been Annie Elizabeth.—*One and All*. Peasgood's Nonsuch.—*G. F. T.* The two Apples from the same tree are quite distinct. The large green fruit is Belle Dubois, the smaller one we should say is a local variety, and is not recognised.—*Middlesex*. 1, Potts' Seedling; 2, Langton Nonsuch; 3, Pitmaston Duchess.—*W. R. W. R.* 1, Colmar Delahaut; 2, Vicar of Winkfield; 3, Comte de Paris; 4, Autumn Josephine; 5, Nouveau Poiteau; 6, Worcester.—*R.* 1, Deux Ans; 2, Bismarck; 3, Domino; 4, Beurré Sterckmans; 5, Autumn Nelis; 6, Beurré d'Amanlis; 7, Worcester Pearmain; 8, Fondante de Cuern.—*M. W. F.* 1, The Late; 2, Ribston Pippin; 3, Wellington; 4, Mank's Codlin; 5, Alfriston; 6, Allen's Everlasting.—*S. H. G.* Scarlet Siberian.—*R. H.* 1, Bismarck; 2, Lady Derby; 3, Worcester Pearmain; 4, Cox's Orange Pippin.—*J. Udale*. Domino.—*T. W.* 1, Grenadier; 2, Cellini Pippin; 3, Duchess of Oldenburgh; 4, Worcester Pearmain.—*W. K.* 1, Dean's Codlin; 2, not recognised; 3, Tower of Glamis; 4, Summer Beurré d'Arenberg.—*J. B.* 1, White Westling; 2, Queen Caroline; 3, Warwick Pippin; 4, Green Codlin; 5, not recognised; 6, Russet Pearmain.—*W. D.* 1, Warner's King; 2, Stirling Castle.—*F. W.* 1, not recognised, very small and shrivelled; 2, Hoary Morning.—*Trumpet*. 1, White Hawthornden; 2, 4, 5, and 6, Jolly Beggar; 3, Ribston Pippin.—*J. A. S.* 1 and 2, Warner's King; 3, Beauty of Kent; 4, Beurré Diel; 5, New Hawthornden; 6, Autumn Bergamot.—*C. H. H.* 1, Keswick Codlin; 2, Lord Suffield; 3, Peasgood's Nonsuch.—*J. A.* A splendid fruit of Ecklinville Seedling.—*W. Barnes*. 1, Cox's Orange Pippin; 2, Fenouillet Jaune. Pears, 1, Catillac; 2, Williams' Bon Chrétien.—*A. C.* 1, Lady Sudeley; 2, The Queen; 3, Golden Noble; 4, Gascoigne's Scarlet Seedling.—*W. H.* 1, Hoary Morning; 2, Twenty Ounce; 3, not recognised; 4, Mabbott's Pearmain; 5, Fearn's Pippin; 6, Lane's Prince Albert.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number*.—*Denbigh*. Malope

grandiflora.—*C. A. M.* *Euonymus europæus*, the Spindle-tree.—*J. B.* *Calluna vulgaris*, common Ling or Heather. The tree is *Populus alba*, the White Poplar.—*A. M.* 1, *Rudbeckia speciosa*; 2, *Helianthus angustifolius*; 3, *Achillea asplenifolia*.—*C. H. T. D.* *Melilotus officinalis*, and *Clematis aromatica*.—*P. L. H.* 1, *Lavandula dentata*; 2, *Rudbeckia* sp.; 3, *Agatheae celestis*; 4, *Rhus Cotinus*; 5, *Pileamuscosa*.—*M. C.* *Saponaria officinalis flore-pleno*.—*H. E., Southampton*. We do not know the variety of *Cattleya Mendelii* you refer to. Yours is a very pretty flower, the markings on the petals being similar to those of *C. Trianae Backhouseana*.—*A. T.* 1, *Oncidium Jonesianum*; 2, *Oncidium Cebolleti*. Both are of the terete leafed section, and are often imported together, being mistaken one for the other when not in bloom. They are however distinct species.—*W. P., Stroud*. There are many supposed hybrids of *Adiantum cucumatum* grown by market-growers, one of them very similar to your No. 1. It is often called *Adiantum cucumatum elegans*; but those who grow plants for market do not trouble much about names. It is an excellent Fern for decorative purposes. 2, *A. concinnum latum*; 3, *A. Waltoni*, another market variety; 4, *A. Bessonianum*, imported from Trinidad in 1896, unless it is a dwarfed and changed form of *A. tenerum Farleyense*; 5, *A. capillus-Veneris fissum*; 6, *A. cucumatum grandiceps*. As your No. 1 seems to have been raised independently of other stock, you should refer it to a nurseryman for opinion when it is in good condition.—*S. J.* 1, 2 and 3 are varieties of *Hibiscus syriacus*, better known in gardens as *Althæa frutex*; 4, *Buddleia globosa*; 5, *Cupressus macrocarpa* var. *lutea*; 6, *Polygonum sachalinense*.—*H. T.* 1, *Viburnum Tinus* var. *hirsutum*; 2, *Veronica Hendersoni*; 3, *Chlorophytum elatum*; 4, *Stenotaphrum americanum variegatum*; 5, *Thuja dolabrata*.—*D. C.* 1, *Ahus glandulosus*; 2, *Caragana arborescens*; 3, *Acer campestre*; 4, *Cornus mas*; 5, *Salix babylonica* var. *ramulus aureis*; 6, *Salix babylonica* (probably).—*J. W.* *Salvia Horminum*.—*Japanica*. The Orchids 1 and 2 are varieties of *Dendrobium herbaceum*; 3, send in flower; 4, *Panicum plicatum*, so far as we can judge by the imperfect specimen sent.—*F. H.* *Aristolochia elegans*.—*L. S. W.* *Clorodendron Bungei*.—*G. A. I.* *Eucomis punctata*.

PEACHES: *T. M.* It is not at all likely the disease has spread from the Tomatoes to the Peach-tree. The fruits appear to have decayed owing to the condition of the atmosphere being unsuitable.

PRIMULA LEAVES: *Primula*. There is no fungus disease of any description. The leaves have evidently suffered from scalding.

SCORCHED PEACH LEAVES: *J. R. P.* The scorched Peach leaves show no trace of mycelium or spores on the affected spots. In one or two places upon the oldest spots, where the dead tissue is passing into decay, there are a few threads, and one or two spores of a species of *Cladosporium* in an immature condition, but this is clearly only a common saprophyte, the associate of decay. The cause must be found externally. Perhaps too much heat has been employed.

YEW: *W. M.* You had better leave the roots in the ground. It would be difficult to remove them without injuring the other plants.

COMMUNICATIONS RECEIVED.—*F. Roemer* (next week)—*W. E. R.*—Constant Reader—Bids—*G. J.*—Income Tax Reclamation Society—*W. Fyfe*—*E. Benary*—*Rev. H. Friend*—*W. & C. Sutton & Sons*—*W. H. S.*—*J. B.*—*A. M. C.*—*F. L.*—*Cars*—*E. M.*—*W. K.*—*E. H. J.*—*H. W.*—*C. T. D.*—*A. D.*—*W. C. G.*—*Roy*—*W. H.*—*F. L. K.*—*W. C. J. H.*—*W. R. S.*—*C. G. S.*—*F. M.*—*Hortus*—*R. F.*—*W. S.*—*Soil*—*G. E.*—*M. A.*—*A. H.*—*A. A.*—*W. C. D.*—*Z. Y. X.*—*D. G. P.*—*W. H. L.*—*H. J. P.*

PHOTOGRAPHS RECEIVED AND UNDER CONSIDERATION.—*F. Street*—*W. Hackett*—*E. Bland*—*H. T. Cookson*—*M. Lennard*—*Dr. Plowright*—*F. Street*.

DIED.—On the 20th inst., WILLIAM WHITAKER, of The Views, Penkull, Stoke-on-Trent, formerly of Crewe Hall Gardens, aged 85. R.I.P.

(For Markets and Weather, see pp. x. and xii.)



JACARANDA MIMOSÆFOLIA, SMALL PORTION OF THE INFLORESCENCE ; FLOWERS BLUE ; FROM THE GARDENS AT ASTON ROWANT, OXON.





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DEVONSHIRE FERNS.

A WEEK'S sojourn in the Barnstaple district inspires me to dilate a little upon the Ferns which teem in all directions around me as I write, and to make a few remarks on the conditions which conduce to that result. First and foremost of course comes the question of climate, and that is of the most congenial character, the rainfall considerably exceeding that of our eastern counties, while the proximity of the sea on both north and south limits of the county contributes to moderate the temperature, and precludes any long periods of hot drought. Apart however from the climate, the peculiar way in which, in this district especially, all high-roads and bye-lanes are literally walled-in with dykes, some 8 or 10 feet in height and 6 to 8 feet thick, built up of stones and soil, at once render these roads and lanes, the latter in particular, veritable Fern paradises. These dykes or banks are obviously very old, and denudation, I believe, wears the roads deeper and deeper, since they are usually much below the level of the fields.

In course of time vegetation of many kinds has completely clothed them, trees and

bushes crowning their tops, and thus in the bye-lanes often transforming the dykes into narrow shady arcades, into which the sun hardly penetrates at all. The almost perpendicular sides of these banks have become the home of myriads of Ferns, which root into the soil and push their fronds through dense masses of most charming mosses which form a sort of spongy cushion beneath them. The shadier the lane the more the Ferns monopolise the space, while in the open high-roads, where sloping banks frequently lead up to the dyke proper, Brambles, Ivy, Bracken, and a veritable host of weeds and grasses compete with the Ferns, and sometimes all but oust them by overgrowth. It is, however, a custom here, and to the Fern-lover a vandalistic one, to trim down these growths indiscriminately in the autumn. I have spent a part of the day on which I am writing, anathematising the doers of this damage, for a lane absolutely curtailed with Blechnums and half-a-dozen other species has been denuded of the bulk of the fronds from end to end, and the debris lies in heaps along the lane side prior to cartage for manure. The odd part of this operation is that it seems to exercise but little check on the plants, though I elicited on special inquiry that it was an annual one, and necessary to keep the highways presentable!

To the Fern-hunter, however, there is some compensation in the fact that the removal of the rampant overgrowth reveals many of the smaller species of Ferns which otherwise are invisible from the road. The common Polypody and Spleenwort, for instance, which had been mainly hidden from view, and the Hart's-tongues are frequently found in quantity behind such screens. A singular feature in connection with species of Fern is their apparently unexplainable appearance and disappearance. For hundreds of yards in the lane I have in my mind's eye, the Hard Fern, Blechnum Spicant, was the predominant species, and so abundant that both sides of the lane were tapestried with its dark-green fronds from 1 to nearly 2 feet long, and still longer barren fronds standing stiffly erect. Here and there among these were Lady Ferns, Male Ferns, Broad Buckler Ferns, Common Polypody, and Hart's-tongues, and occasionally glimpses of the Black Maidenhead Spleenwort and Common Spleenwort. For a long stretch these are all there are to be seen; then a Shield Fern crops up, and from that point some scores of plants of that species present themselves, only to cease equally abruptly, though the general conditions appear to be precisely the same. A very fine specimen of the Hay-scented Fern, Lastrea æmula, puzzled me at first, being only just within eyesight on the top of the dyke; but this was the only one I saw. At another place, however, this Fern suddenly cropped up on a bank, and was plentiful for about 20 yards, when it ceased as suddenly as it began. Recurring to the Blechnum lane, as I may term it, I did not find its frequent companion, the lemon-scented Buckler Fern (Lastrea montana) until I came to a gate leading into a field skirting a wood, and here was a long row of L. montana continuing for some 50 yards, then again not a plant, though the wood continued, and there was no obvious reason why the Ferns should not do the same. Further on the Shield Fern took the lead, the bank being full of them and their companions the Hart's-tongue Ferns. I came to a gate

which broke contact, as it were, and then only one specimen turned up for a long time. It is extremely difficult to account for this kind of colonisation, since, as already stated, the same conditions prevail, and it is difficult to believe the dispersion of the spores can be so restricted as to form an explanation.

Up to the time of writing, the Ferns of this locality appear to be peculiarly constant to the normal types. As usual, the Hart's-tongue has afforded some half a score specimens of the multifid form known as lobatum, every "frond-tip" being divided into three or four or even more "fingers." One Blechnum displayed the same character, another was prettily involute (B. montana revolvens), all fronds convexly curved, a third was distinctly crispate; but none of these was good enough to remove.

A singular example of partial variation in the Lady Fern was gathered, four fronds being beautifully congested and crispate, in conjunction with a dozen quite normal ones. The spores on the abnormal not being ripe, I am preserving them carefully for experiment. Finally, crossing a small stone bridge and looking over the parapet, there was found a beautifully congested undulated Hart's-tongue Fern, a little thoroughbred, about 3 inches high. This was growing in a chink all but out of reach, and it required some diplomacy to get it out with the tip of the trowel, and then preserve my own equilibrium whilst saving the Fern from falling into the rapid stream below. I subsequently reflected that if I had opened an umbrella and suspended it below the prize, I might have saved a deal of strain and some anxiety. I have omitted to mention a few hundred yards of polydactylous Bracken, and a distinct form of Asplenium Filix-femina incurvum, with pinnules rolled tightly backwards; also a dentate and bifid form of the common Polypody, a rather unusual combination, but not a gem of first water.

The species encountered so far are the Black Maidenhead Spleenwort (Asplenium Adiantum-nigrum), the Maidenhead Spleenwort (A. Trichomanes), the Wall Rue (A. Ruta-muraria), the Lady Fern (Asplenium Filix-femina), the Male Fern (Lastrea Filix-mas), the Hard Male Fern (L. pseudo-mas), the broad Buckler Fern (L. dilatata), the Hay-scented Fern (L. æmula), the Lemon-scented Fern (L. montana), the Hart's-tongue (Scolopendrium vulgare), the common Polypody (P. vulgare), the Hard Fern (Blechnum Spicant), the Hard Shield Fern (Polystichum aculeatum), the soft Shield Fern (P. angulare), and of course the Common Brake (Pteris aquilina), i.e., fifteen species all by the road-side.

Devon has still about another dozen species, but I do not expect to find any more in this district on this occasion, as the wet weather absolutely precludes hunting in woods, and this is too far from the sea for coastal species, such as Asplenium marinum, A. lanceolatum, and the rare Adiantum Capillus-veneris.

Resuming my pen at the end of a week's hunting, my experience as a whole is disappointing, the very redundancy and lush character of the Ferns appear to be adverse to the production of "sports." Many sports grow smaller than the normal types, and they would obviously be ousted in the

struggle for existence where the normal species grow abundantly and densely.

The little Hart's-tongue, mentioned above, survived and held its own purely by virtue of its originating in a chink in a masonry wall, on which the Ferns, though numerous, were all stunted. In an ordinary Fern-bank it could not have survived. Rough and broken rocky ground, where the plants are more or less isolated into clumps, affords much better chances for "sports" to hold their own. Many of the best "finds," however, have been discovered under other conditions, and my present experience is quite possibly due to ill-luck instead of other reasons, a counterpoise to exceptionally good luck on previous occasions. *Chas. T. Drury, V.M.H., F.L.S.*

THE MAKING AND KEEPING OF HOLLY HEDGES.

Of hardy trees and shrubs that are used for the making of hedges in this country, the Holly and the Yew hold the foremost places, the Holly being the most useful for outside hedges, and the Yew for positions inside the garden. These two plants require practically the same treatment when used for hedges, and the following remarks apply almost equally as well to one as the other. To make and keep a Holly hedge in good condition regular attention is required, especially during the first few years. If it is allowed to get choked with weeds or to grow unshapely, a great deal of time will be wasted.

Mistakes made in the planting of a hedge cannot afterwards be rectified except by planting the whole over again. The ground should be thoroughly trenched 3 feet wide and 3 feet deep, throwing out any poor soil that may be found and replacing this with good material. A layer of well-rotted manure should be worked in about 18 inches deep, so that the roots will come into contact with it soon after they start into growth. Let the surface of the soil be rather lower than that of the unbroken ground on either side after the hedge is planted, so that the plants will get the full benefit of rain, which will collect and soak into the ground around them instead of running off as it would do otherwise. It is sometimes a difficult matter to make a hedge properly owing to the presence of large trees, for having to follow the boundary line there is no choice allowed as to site. Where this is the case, any tree whose trunk is within 10 feet of the proposed hedge should be cut down, and if this is not done the overhanging branches should be cut off to allow light and rain to fall on the plants. The roots will be cut back in trenching the ground, and if they are found in considerable quantity, follow them back towards the tree a little way, so that they will not interfere with the hedge during the first year or two after planting.

The plants to be employed for making a hedge require to be carefully selected, for it is a waste of money to buy and plant a badly-rooted Holly, which almost invariably dies. The size of the plants is largely a question of taste and expense, but sturdy plants 3 feet high, if planted 18 inches to 24 inches apart, will be found to answer very well, and prove more satisfactory than smaller ones. In choosing plants from a nursery those that look rather stunted should be selected in preference to those that appear stronger and fresher. The former have probably been moved within a year or two, and are well rooted, while the latter have perhaps not been shifted for some years, and have become coarse-rooted, and are therefore less likely to live after removal. If any doubt exists, the roots of one or two plants should be examined before the purchase is made, rejecting them if

they do not carry a good ball of soil. A well-rooted Holly of any size should not show any root larger than a lead pencil outside the ball of soil.

THE BEST TIME FOR PLANTING HOLLIES

is in October, or as soon in the early autumn as the year's growth has thoroughly ripened; but I have seen Hollies succeed when planted at all times between October and April, except when the ground has been frozen, though in all cases they have been well rooted, but thoroughly adapted for removal.

The keeping of a hedge in good condition for the first two years consists chiefly in the work of clearing away weeds, and the cutting back of any long shoots that grow laterally beyond the line of the hedge. The third year, however, it will require a proper clipping on each side, and also on the top if it has attained the required height; but if not, the top should be left to grow.

early spring, about February or March, and be cut in hard on both sides, cutting back to within a few inches of the main stems. At the same time the height of the hedge should be lowered considerably, or it will be found to break weak and irregularly at the bottom. Let a good top-dressing of manure be lightly forked in on each side afterwards, and if any roots are exposed, afford them a top-dressing with fresh soil. After two years the hedge will have re-established itself, and if attention be given, it will become better than it was before. *J. C.*

VIBURNUM TOMENTOSUM, THUNBERG.

The sterile variety of this species (see figure in *Gardeners' Chronicle*, 1901, p. 321) has long been in cultivation in this country under the name of *V. plicatum*, having been introduced from Japan



FIG. 93.—VIBURNUM TOMENTOSUM: FLOWERS WHITE.
(From a Photograph taken by Mr. Radill in the Royal Gardens, Kew.)

September is the best month for clipping old, well-established hedges, but a young hedge is often improved by being clipped both in spring and autumn for the first three or four years, as it is during that time the foundation of the future hedge is laid. Up to 5 feet or so in height the sides should be upright and the top flat, but above that height the sides should slope in gradually from the base, and the top be either brought to a point from each side, or it can be cut off flat in such a fashion that the width of the hedge at the top is only half of what it is at the base.

There are two reasons for this: first, the sloping sides and narrow or pointed top do not favour the collection of snow in the winter; and secondly, and perhaps more important, a hedge with a narrow top keeps better furnished at the base than one the sides of which are cut straight.

It sometimes happens that a Holly-hedge, having been neglected, has grown very wide, with thin weakly wood in the centre. When such is the case, it should be taken in hand in the

in 1846. The type, although not so well known, possesses merits which should appeal to all lovers of hardy shrubs. It is of extremely hardy constitution, thrives well in an exposed situation and almost any soil, and is one of the most prolific flowering shrubs I know. It is useful alike for planting in the shrubby border or for grouping together in beds on lawns. When given an open position where the wood can be thoroughly well ripened up, it never fails to give a fine display of flowers each spring in early June. The plant forms a strong free-branching bush or small tree of neat and compact habit, sending out each year sturdy horizontal branches, from the upper parts of which, in early spring, two rows of short lateral branchlets are produced, each terminating in a loosely-flowered corymb of pure white flowers, the outer row of which are sterile and greatly enlarged. As each inflorescence is from 3 to 5 inches in diameter, they almost cover the whole plant with a sheet of white, the attractive feature of course being the large white sterile flowers. Both the type and its sterile

variety are useful plants for forcing purposes. If lifted in autumn, just before the fall of the leaf, placed in suitable sized pots, and plunged in the open until they have been subjected to a few frosts, they will then force as well as the majority of shrubs which are used for that purpose. *Chas. P. Raffill.*

BULB GARDEN.

DEEPLY BURIED BULBS.

IN the interesting note from Mr. S. W. Fitzherbert on the *Vallota* on p. 209 occurs the following passage: "The bulbs grew at various depths, some being fully a foot beneath the surface, but these were growing quite as vigorously as those at a less depth." The writer of the note quoted seems to regard this fact with surprise, but my experience of bulbs and bulb-planting generally serves to confirm an impression that deeply planted, or what is perhaps nearer the truth, deeply buried bulbs are much more vigorous than those planted in the usual manner. I have before now in the pages of the horticultural press directed attention to the extra vigour of bulbs when deeply buried in the earth. Workers in a bulb-growing nursery will repeatedly find *Snowdrops*, *Snowflakes*, *Chionodoxas*, *Muscari*, and other bulbous plants of small size buried far below the surface, at a depth no one would ever plant them. These bulbs are turned in during the process of digging, and when one notices a strong-flowering example in the wrong place the chances are the tiny bulbs are a foot or 18 inches beneath the surface of the ground. Nearly thirty years ago, near Painswick, in Gloucestershire, I observed some remarkably vigorous clumps of the common *Snowdrop* in an old wayside and deserted cottage-garden. The leaf-growth was about 18 inches high; the clumps were of the size of a bushel-basket. Thinking to lift some plants with the aid of a stout walking-stick, I commenced operations, when a casual pull at the leaf-growth revealed the depth of the bulbs. Making a trench at the outside of one clump, I discovered that the bulbs were at a depth approaching 18 inches, and so I left them without further disturbance. These tiny bulbs, in spite of their depth below ground, had foliage of much greater strength and length than is usual.

How the bulbs reached this depth, whether drawn in gradually through a long series of years, or more suddenly (as in some known instances) by "dropping," is an open question. I have repeatedly dug to a great depth for buried bulbs of *Crocuses* and the other plants named, without finding the root. A flowering spray of fifteen or more blossoms of *Chionodoxa Lucilia* on a stray plant has more than once made me anxious to find the root. In the few instances where I have succeeded there has been no great increase in the size of the bulb, and the conclusion is that the great depth is mainly responsible for this greater vigour as well as the much increased leaf-growth, &c. Many *Daffodil* bulbs that have passed through my hands have obviously come from a depth approaching 2 feet, and it is interesting to record that the leaf-growth is invariably proportionate. *Daffodil* bulbs at these depths increase more slowly, and in some instances, notably in the varieties "maximus" and "princeps," the bulbs lose the rotund character and assume a flattened compressed shape, due probably to the greater soil weight about and above them, largely influenced by their own methods of increase. In *Narcissus obvallaris* the rounded character of the bulb is maintained at great depths; but in this variety increase is very slow. In the smaller-rooted bulbs I have named, while an enormous increase in all-round vigour is apparent, the only appreciable difference in the bulb is its more elongated neck. *E. Jenkins, Hampton Hill.*

SHERFIELD MANOR,

THE residence of J. B. Taylor, Esq., is situated four miles from Basingstoke and twelve miles from Reading. The estate is extensive, and is joined on the one side by that of Lord Bolton, Hackwood Park, and on the other by Strathfieldsaye.

The mansion was built twelve years ago by the present owner, and is in the Victorian era style of architecture. The former building was of the Tudor Gothic order. In front of the house, a mile distant, flows the river Lodden. The

becoming clothed with climbing plants. *Magnolia grandiflora* covers a space of 40 feet high and of proportionate width; a magnificent specimen of *Rose Rêve d'Or*, too, has reached 40 feet in height and flowers well.

Standing on the terrace and looking southward, is seen a magnificent glade, fully a quarter of a mile in length and of varying width, backed with magnificent Oak and Beech trees. The fringe of *Rhododendron ponticum* abuts on to the grass irregularly. Several handsome Birch trees have excellent positions here. This is one of the finest



FIG. 94.—SHERFIELD MANOR: VIEW OF THE TERRACE STEPS.

mansion is approached by means of two entrances on the Basingstoke and Reading road. The nearest station is Bramley, two miles distant, on the Reading and Basingstoke line.

The mansion stands in a well-timbered park of 200 acres, and is approached on the east side by an exceedingly fine flight of terrace steps. On each side is a mass of charmingly arranged flowering plants. A portion of the terrace wall itself is covered with *Clematis flammula*, which when in flower pervades the whole atmosphere with its delicious scent.

The terrace itself is some 30 feet wide, and is composed of tiles. The house is fast

features of the estate, and shows rare judgment on the part of Mr. Taylor in forming this handsome glade from the thick wood which he found when taking over the property. The trees range from eighty to a hundred years old, and are extremely handsome.

The pleasure-grounds cover about thirty acres of land, irrespective of this glade, and are arranged to afford masses of colour as well as great variety. Especially fine are the *Rhododendrons*, such excellent sorts as *Pink Pearl*, *Lady Helen Cathcart*, *John* and *Anthony Waterer*, are planted by the hundred in a bed. To prevent these *Rhododendron* beds appearing

dull in summer huge quantities of *Lilium auratum*, *L. a. platyphyllum*, and the various forms of *L. speciosum* are utilised with good effect. Such showy subjects as deciduous *Magnolias*, *Weigela* "Eva Rathke," *Forsythia suspensa*, *Spiræa* "Anthony Waterer," and *Fuchsias virgata* and *gracilis* are very effective.

One huge bed of *Rhododendrons* recently planted had growing in it, to hide the soil, *Daisies*, *Myosotis*, and *Foxgloves*.

Roses are particular favourites of the proprietor, and they are planted to produce effect, one variety only in a large bed—such varieties as *Dr. Grill*, *Madame Abel Chatenay*, *Madame P.*

with alpine plants is arranged; and very pretty it must be in spring. The top is covered with various species of climbing plants.

A very pleasing rockery, with waterfalls made of Derbyshire stone by the gardener, Mr. J. Wasley, three years since, does him much credit, as it is altogether devoid of stiffness. The planting is effective, especially the masses of evergreens and Bamboos and Ferns. *Cistus ladaniferus*, *C. purpureus*, with *Campanulas* in quantity, help to render this a pleasing feature. To the rockery a lake of about 2 acres is connected, the margin of which is effectively formed with rocks, and judiciously planted, and when

tionally fine. Pears were a capital crop. An archway 100 yards long, 8 feet wide, is planted with trees of late varieties, and in time will be a feature. Plum trees against a north wall were carrying heavy crops of fruit, such varieties as *Pond's Seedling*, *Orleans*, and *Victoria*, well showing their suitability for such an aspect. Blackberries are much appreciated here, and are cultivated remarkably well. An archway 8 feet high and 50 yards long, is erected for Blackberries, the *Loganberry* and the *Japanese Wineberry*: *Rubus laciniata* is the Blackberry grown. They are planted a yard apart, cut down to the base, and allowed to grow with three stems as cordons.



FIG. 95.—SHERFIELD MANOR: SHOWING A WALK THROUGH THE KITCHEN GARDEN, BORDERED WITH ANEMONE JAPONICA AND OTHER PERENNIAL FLOWERING PLANTS.

Perny, *Comtesse Festetics Hamilton*, *Killarney*, *Queen Mab*, *Kaiserin Augusta Victoria*, *Madame Lambard*, and *Marie Van Houtte*.

A feature is made of standard *Roses* having a weeping character, planted singly in suitable positions on the grass, such varieties as *Flora*, *Euphrosyne*, *Félicité-Perpétue*, *Madame A. Carrière*, and many varieties of *Rosa wichuriana*. At the entrance to the Rose-garden, which is encircled by a Yew hedge, an archway at each entrance is covered with *R. wichuriana* "Universal Favourite," quite one of the best for the purpose.

Leading from the kitchen-garden towards the house is a very fine pergola some 200 yards long, 9 feet high and as much in width, built of Larch. At the base a margin of stones covered

well established it will add another feature to the garden [see fig. 96]. An extremely fine group of *Tritomas* with flower-stems quite 6 feet high, produced a bold effect, as did *Arundo conspicua*. *Moutan Pæonies*, to the extent of 100 plants, growing in a long, narrow border on grass, must produce a charming effect when in flower, as they are of the finest varieties.

HARDY FRUITS

are grown in large quantities. Nowhere have I seen Apple-trees better managed or producing richer crops of highly-finished fruit. Such varieties as *Cox's Orange Pippin*, *Ribston Pippin*, *Sturmer Pippin*, *Worcester Pearmain*, *Lady Sudeley*, *Lane's Prince Albert*, *Wealthy*, *Peasgood's Non-such*, and *Baumann's Red Reinette*, were excep-

The growth is so free that they meet in the middle, the fruit hanging down in huge clusters, making an extremely pretty effect. Such a method of culture well illustrates the value of Blackberries for profit. If another variety is required, that of "Wilson Junior," as grown here, is earlier in ripening, and may be recommended.

THE GLASSHOUSES

are extensive, and thoroughly well filled with useful material to meet the demands of a large establishment. The vineries are not numerous, but contain extremely fine crops of the varieties *Madresfield Court* and *Muscat of Alexandria*. In one house the former variety had been planted five years, each rod was carrying eight bunches, not less than 4 pounds each, and such berries and

colour that it would be difficult to imagine this favourite Grape in better condition: evidently Mr. Wasley thoroughly understands the requirements of this Grape. Vines of "Muscat of Alexandria," eight years old, were carrying twelve bunches each of an average weight of 3 pounds, with exceedingly fine well-coloured berries. The varieties Mrs. Pince and Black Alicante were promising. Peaches are largely grown, such varieties as Noblesse, Barrington Exquisite, Princess of Wales, and Walburton Admirable were carrying huge crops of fruit of high quality. Of Nectarines there were such varieties as Victoria, Spencer, Humboldt, and

The Palm-house is a lofty structure well furnished with *Hibiscus rosa sinensis*, a glowing crimson-coloured variety with blooms fully 8 inches in diameter; *Passiflora edulis*, *Bougainvilleas* and *Ipomoea Horsefieldii* were draping the roof. *Chrysanthemums* for exhibition and home use are largely grown. Six hundred plants are cultivated for the first-named purpose. The appearance of the plants justifies hopeful anticipations for the future. Plants for supplying flowers for cutting and dwarf plants for decoration are grown also. I noted a splendid batch in 5-inch and 7-inch pots, growing with one stem struck from cuttings inserted in February and

KEW NOTES.

MUCUNA IMBRICATA.—This striking Leguminous plant is now flowering in the Palm-house. It is probably the most floriferous of the *Mucunas* under cultivation. It is a strong woody climber trained to the roof, and has shoots 20 to 30 feet long, with large, coloured leaves. The inflorescence is a large pendant raceme, suspended from the branch by a peduncle 9 inches in length. The flowers are blackish-purple, about 2½ inches long; the raceme contains about thirty flowers, having very much the appearance of a bunch of large black Grapes. It is figured in the *Botanical Magazine* under the name of *M. purita*. The



FIG. 96.—SHERFIELD MANOR: A PRETTY ROCK AND WATER GARDEN. (SEE P. 236.)

Pine-apple. Plum-trees in pots are a great feature, very fine crops of such desirable sorts as Czar, Denniston's Superb, Bryanston's Gage, and Early Transparent Gage are grown. Of Figs, the variety Brown Turkey is appreciated most. Strawberries in pots are grown to the extent of 1200 plants; Royal Sovereign is the favourite variety.

Flowering and foliage plants are numerous and well managed. There are 1000 plants of Carnations, and certainly they are in good health and of all sizes. An exceedingly fine batch of *Humea elegans* was noticeable. Cyclamens to the extent of 300 stocky plants are grown. Double and single-flowering Begonias are fine and much appreciated for an autumn display, and so is *Gloire de Lorraine* and *Gloire de Sceaux*. In the plant stove, *Gloriosa superba*, *Ixora Westii*, *Adiantum Farleyense*, *Cattleya labiata*, *Dendrobium Phalaenopsis*, and *Calanthes* were very fine.

March. Mr. Wasley carries out the wishes of his employer most thoroughly, and there is evidently much reciprocation between all concerned. *A Wanderer*.

ORCHID EXHIBITION AT DÜSSELDORF.—We have received a copy of a schedule of prizes that will be offered for Orchids at an exhibition to be held in connection with the International Exhibition at Düsseldorf on October 20 and three following days. There are sixty-one classes for Orchids alone. During the same days there will take place a large exhibition of *Chrysanthemums* and *Cyclamens*. Particulars of the competitions for Orchids may be obtained of HERR OTTO BEYRODT, Orchid Grower, Marienfelde, near Berlin.

plant now in flower was raised from seed three years ago, and the six racemes borne upon it are the first it has produced. When the plants are older and possess stout, woody stems, they flower freely each year.

ARAUJIA GRANDIFLORA, Benth.

This is one of the most floriferous plants that have been grown in the *Nymphaea*-house this season. The plant has produced a constant succession of flowers since the beginning of June. At the present time it has growths 6 feet in length, wreathed in fragrant, *Stephanotis*-like, white blossoms produced from the axils of the leaves. It is a stove climbing plant that delights in plenty of direct sunshine, being a native of Brazil, and will make growths 25 feet in length in the course of the summer. The young twining stems are covered with coarse brown hairs; the

leaves are opposite, and vary much in size. It is figured in the *Botanical Magazine*, t. 3891, under the name of *Physianthus graveolens*, and is also synonymous with *P. auricomus*, and *Araujia graveolens*. W. H.

HERBACEOUS BORDER.

ARCTOTIS AUREOLA ROBUSTA.

A PLANT procured from a nurseryman under the above name has been in flower in the open with me for three months, and, with its bright orange-coloured flowers 4 inches across, is a very attractive sight. It is planted at the edge of a retaining wall about 7 feet in height, in a sheltered position, where it can enjoy the sun the whole day, and is growing in a staple chiefly composed of stones and grit. The plant has formed a sturdy little bush about 14 inches in height and 20 inches through, being far more restricted in growth than *A. aspera arborescens*, which spreads 5 feet or 6 feet in a year, while its blossoms are far handsomer than those of the last-named species. *A. aspera arborescens* remained in the open unprotected during the whole of last winter and was quite uninjured, and it is to be hoped that this orange-flowered *Arctotis* may prove hardy; but several cuttings have already been rooted to take its place should it succumb. *A. grandis*, a rampant-growing annual, which has been highly praised, is, I consider, much over-rated. Its flowers, though individually handsome when expanded, are not borne in sufficient numbers to render the plant a decorative subject of value, while it cannot be compared for effect with *Dimorphotheca Ecklonis*, whose flowers are very similar, though smaller, and are produced in lavish profusion. Its branches are also so brittle that they are invariably snapped off by high winds unless each one is tied to a separate stake, which further detracts from the plant's appearance. I have no idea why the adjective "robusta" has been tacked on to the name of the subject of this note, which appears to me to be identical with *A. aureola*. S. W. Fitzherbert, South Devon.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BARONSHALT, TWICKENHAM.

HENRY LITTLE, Esq., is one of the oldest of Orchid amateurs, and his collection at St. Margarets, Twickenham, in the care of Mr. Howard, his gardener, contains plants which have been in his possession over thirty years, and still the fine varieties then selected are generally unsurpassed by those of more recent introduction. A remarkable instance is given in the bright and richly-coloured *Lælio-Cattleya* × *elegans* Littleiana, for which Mr. Little obtained a First-class Certificate, August 25, 1885, and which is now in flower among a good number of other forms, but none of them so fine in colour. The same applies to the very beautiful original form of *Cattleya* × *Hardyana*, part of the original plant that was certificated in 1885. Eight selected varieties of *C. × Hardyana* are at Baronshalt, but none of them with that peculiar velvety ruby-purple colour to the labellum. *Cattleyas* and *Lælias* thrive well here, and the greater part of the front staging of one long house has a varied collection of showy hybrids, of which several fine forms of *Lælio-Cattleya* × *callistoglossa* are in flower, the finest being the variety "ignescens."

The forms of *Cattleya Gaskelliana* are passing out of bloom, among those left being a pretty white variety with rose markings on the lip. The specimens of autumn-flowering *C. labiata* are beginning to bloom very early this year, some remarkably bright forms being already in flower. *C. Warszewiczii* is a special favourite, and some good varieties are flowering, so also *C. Dowiana*,

C. Loddigesii, and a pretty variety with the general appearance of *C. Leopoldii*, but with signs of hybridity. Many plants of *C. Schroderae* at the cooler end of the house are "sheathing" well for bloom, as are also plants of *C. Mossiae*, the labels in some of the best varieties indicating that they were purchased in 1886. *Lælia purpurata* is a favourite species, and especially the white-petalled forms. The best two which have yet flowered of this class are *L. purpurata* Littleiana, pure white, with light rose markings, and fine purple lines on the lip, which was awarded a First-class Certificate at the Temple Show, 1900; and *L. p. Baronshalt* variety, which secured an Award recently. A large number of *Vanda teres* planted out in the warm-house have attained great vigour; a batch of *Phalanopsis amabilis* *Rimestadtiana* is doing well, and the cool-houses contain over 4,000 plants of *Odontoglossum crispum*, mostly unflowered, and among which it is hoped some fine blotched forms will appear.

Cypripediums are well represented, the prettiest at present in flower being *C. × Lachmee* (ciliolare × superbiens), and *C. × Javanico-superbiens*.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Lælia pumila and its several varieties grow well during the summer in the cool-house, but now they are sending up their flowers and finishing their season's growth a few degrees more heat is necessary for them. If the plants are allowed to flower in the cool-house I find they quickly become spotted, which defect is caused by the atmospheric moisture condensing on them during the night. It is advisable to suspend these plants either in the Cattleya or in the intermediate-house, where the flowers will last many days in perfection. Until growth is completed the plants will require liberal supplies of water at the root. One of the worst enemies of these plants is the white-scale, which multiplies very rapidly, and whenever it appears should be quickly brushed off. Plants of *Lælia harpophylla* that are starting into growth should be removed to the same temperature as the above, and water should be afforded them in small quantities until the growths are well advanced, as the new shoots, when only a few inches high, are very tender, and are liable to turn black and decay if the compost is kept too moist.

Lælia anceps and its numerous varieties, also *L. autumnalis*, *L. albida*, *L. Marriottiana*, and others that are now producing their flower-spikes, will require plenty of water at the roots during the next few weeks, and as much sun-heat as possible; it matters little how high the temperature may rise if plenty of ventilation is applied. *L. Gouldiana* is in full growth, and should be placed at the warm end of the house, as near to the roof-glass as possible. Afford copious supplies of water until the flower-spikes appear. *L. rubescens*, better known as *L. acuminata*, should be suspended near to the roof-glass in a light position in the East Indian-house, and should be encouraged until growth is completed.

Flowering plants of *Vanda carulea* must be placed in a position that will allow their spikes to receive abundance of light; they will also benefit by receiving plenty of sun-heat, providing sufficient fresh air and water are afforded. Suspended in a dry, airy corner of the Mexican-house, near one of the top ventilators, the conditions will suit them admirably; better still, a similar position in the greenhouse where the *Dendrobiums* are finishing their season's growth. The great difficulty with this beautiful *Vanda* is to keep the foliage free from the disfiguring black spot, which is caused by growing the plant in too high a temperature, with insufficient ventilation, and by affording too much moisture at the roots during the resting season. Fire-heat, when given to any great extent, also quickly brings them into a deteriorated condition.

The Brazilian *Oncidiums* *O. Forbesii*, *O. crispum*, and *O. varicosum* are now making roots freely and sending up their flower-spikes. Strong, well-rooted plants may be allowed to bloom, but it is advisable that small plants, and those that carried an exceptionally strong spike last year, should have their flower-spikes removed. Almost every cultivator who has grown these *Oncidiums* knows what splendid spikes can be obtained the first year after importation; also that in many cases, while bearing such spikes, the plants have been over-strained, and have gradually dwindled away. To keep these plants in good health, it is advisable to cut the spikes off immediately the flowers are open, and afterwards to give the plants a good rest, not allowing them to bloom again the following season, especially if the new pseudo-bulbs are weak or unhealthy.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Top-dressing for Apricot Trees.—If the syringe has been used freely at intervals to wash both the under and upper surfaces of the leaves, the foliage should be in excellent condition. The present is a good time to afford a heavy top-dressing to the roots, if such is considered to be necessary, using fresh, sweet compost for the purpose. This kind of work is sometimes deferred until after the work of pruning and nailing has been finished; the result even then is satisfactory if only a slight top-dressing is required, but if it is intended to remove the old soil as low as will expose the principal roots, so that they may be brought nearer to the surface, the work should be done early in the autumn, when the soil is warm and moderately dry. Apricots require a good sweet, fibrous loam, with plenty of old brick mortar-rubble, and a moderate quantity of bones added. When lifting the roots take great care not to injure them more than is unavoidable. After the soil has been removed to a sufficient depth, examine the remaining soil beneath, and if it is found to be very dry, afford a liberal supply of water some considerable time previous to adding the fresh material. Sever all damaged parts of roots with a clean cut, for some will get broken no matter how carefully the work is performed, and relay them at various depths, working the fresh compost well amongst them, especially if the trees have been partly undermined in order to get at tap-roots. No water need be afforded for the first few days after the work is completed, but after that time the roots should be given a thorough soaking with water and a mulch of strawy manure applied over the surface of the ground.

Planting young Apricot-trees.—Those intending to plant young trees this autumn should see that suitable and thoroughly drained borders are prepared. In the colder parts of the country the soil should be raised several inches above the level of the surrounding land. A new border 6 feet wide and 2½ feet deep will be found to afford ample rooting space for many years to come, provided an annual top-dressing is applied. Allow a space equal to 17 feet or 19 feet between each tree, and do not plant the roots too deeply. A western aspect appears to suit the Apricot, but I have seen trees grow and fruit very satisfactorily on a wall having a south-east aspect. There is always a danger that the flowers may be injured by frosts, as the Apricot is amongst the first of fruit-trees to flower. The varieties Moor Park, Blenheim, Hemskerk, Grosse Pêche, and St. Ambroise are usually free-cropping, and the fruits are large in size.

Plums.—The variety *Coe's Golden Drop* is cropping very heavily here, and the fruits are now ripening somewhat quickly. Examine the trees daily, and gather any fruits that are approaching ripeness, provided they are in a dry condition. Gather each fruit with the stalk adhering, and place the fruits in shallow boxes in a cool, dry fruit-room. These Plums will keep sound and good for several days. Take care that the trees are covered properly with netting, and set traps for wasps and flies. *Coe's Golden Drop* makes a capital succession to *Jefferson's*, *Transparent Gage*, *Bryanston Gage*, and other varieties of dessert Plums.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq.,
Ashwicke Hall, Marshfield, Chippenham.

Preparing boxes for use in forcing.—In many small gardens the forcing of vegetables is carried out under adverse circumstances, owing to there being insufficient room, and lack of other conveniences. Such difficulties are not surmounted without much forethought and worry, but to the thinking man most things become easy in the end, and it will be a very poor place indeed if he cannot by some means make it suit his requirements. From such places salad and other produce are sometimes supplied fresher than from establishments where unlimited room and every convenience exist; and the reason is that under limited conditions small batches are put in at one time, and this is done often. If the demand is about equal to the supply, everything is used up as it comes to perfection. The fitting up of a small place for forcing such crops as Seakale and blanched salad is not difficult, provided boxes are used for the purpose. These should be made in various sizes to suit the plants which are to be put in them. For plants with long roots deep boxes will be needed. A second box is required to fit on that which contains the roots, in order to provide "head-room" for the plants to develop, the upper box being turned upside down to exclude light. If the forcing is to be done in a conspicuous place, the boxes may be painted, and when in use can be built up on the top of each other in stoke-holes, under stages, along back borders, in cellars, or any convenient spot where there is sufficient heat for the purpose desired. The boxes should be made ready now, and such plants as Dandelions may be planted in them, and if placed out-of-doors on a hard bottom they will get established and be ready for introducing into heat when required for forcing later on.

Mint and Chives and other plants that do not require to be blanched should also be boxed up to be at hand when wanted. If boxes and soil are made ready under cover this work can be done on wet days.

Potatoes.—Do not neglect to have these lifted as soon as the haulm shows signs of decay, especially on wet soils, and store the tubers as was recommended in a previous Calendar. Many cultivators believe that the tubers will not keep if they are lifted before they will part freely from the stem and the skin has become hard. We have lifted them earlier than this in large quantities on several occasions, and the result has always been in every way satisfactory.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON,
Bart., Paddockhurst, Sussex.

Calceolarias.—A good number of cuttings may now be inserted if the "wood" is not too hard. The dry weather has prevented the plants making much growth. A brick pit is best, as the frost can be better kept out, or a good stout wooden frame will answer the purpose. The soil should be made free from wire-worm and other grubs. A sandy loam is suitable, with some leaf-mould added. Make the soil moderately firm before inserting the cuttings. Cuttings of medium size and short-jointed are better than long "sappy" ones. Afford shade from bright sunshine, and spray the plants overhead occasionally, according to the condition of the weather.

The Wild Garden.—In a garden of this description there will be always portions that require to be replanted with more suitable or newer kinds of plants. This having been noted during the summer, trenching of the ground will have been done as previously advised, and some good short dung worked in during the process. In other portions of the wild-garden the ground should be cleared of underwood that has become overgrown, and the grass cut so that the bulbs that were planted last season may obtain benefit from the rains, and it will be easier also to plant fresh bulbs afterwards. Clear away weeds, and make the garden appear neat. Where it is possible, afford established bulbs and other spring-flowering plants a good mulching of short dung or some bone meal, when the grass is cleared off. Any rough good soil may be got ready for planting the bulbs and roots in, but more rain will be required

here before planting can be done, the soil being very dry. Heaths should be kept particularly free from grass, it being very difficult to eradicate it when once established among them. Afford the Heaths a dressing of rough peat. Remember to keep all bulbs and roots properly labelled, in order that the planter shall know where to place new specimens. Trailing plants on bridges should not be allowed to cover the wood entirely, especially if the structure is of a rustic character. Secure climbing Roses and other creepers against wind. Where Ivies and mixed creepers are planted together, the former will require to be pruned, or it will soon kill the others. Pheasants are apt to "dust" themselves upon ground where bulbs have been planted, but pieces of old netting, if laid on the ground, will check them. Autumn Crocuses now in flower are very attractive to the pheasants, therefore insert a few tops of old Pea-sticks among the plants.

Shrubs.—Weeds are now appearing in great numbers among the shrubs, and they should be at once rooted up with the hoe. If time can be spared rake them off afterwards. Cut over the grass that is growing between shrubs, as fallen leaves can be raked up quicker where the grass is short. Shrubs that are to be lifted for transplanting into flower-beds, or for putting into pots, should be syringed and the roots watered before they are lifted; and in planting make the soil around them firm. Then apply water and afford a mulch with some manure from an old Mushroom-bed. Affix stakes to any shrubs that require support.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North
Mymms Park, Hatfield, Hertfordshire.

Solanum capsicastrum.—Plants growing in the open ground should be cut round with a sharp spade, as recommended for Richardias in a recent Calendar. After a few days let them be lifted carefully and potted into 5 or 6-inch pots, according to the size of the plants. When potted, the plants should be placed in a cool and moist pit or frame, and shaded from the sunshine until they have recovered from the check caused by the process of transplanting. In order to prevent the loss of leaves, keep the atmosphere of the pit somewhat close at first, and use the syringe freely among the plants on fine days. In a fortnight the plants should be fairly well established, and the shading may then be discontinued. If the points of the shoots are pinched back to the first flower, the berries will be larger in size and more fully exposed to view.

Chrysanthemums.—Plants having flower-buds in a forward condition and "showing colour" should at once be placed under cover. Preparations must also be made for housing all later plants upon the first indication of a change of the weather to a colder condition. When housing the plants afford them as much room as possible, to prevent loss of foliage. Continue the frequent use of well-diluted stimulants until the flowers are half open.

Indian Rhododendrons (Azaleas), &c.—Let these be placed in their winter quarters without delay, but previous to taking them indoors ascertain whether they are free from thrips, and if the presence of these be detected take steps to thoroughly cleanse the plants. Epacris, Genistas, Acacias, and all other tender plants still in the open-air should be placed under cover at once.

Caladiums.—Many tubers are lost annually through drying off the plants prematurely. Plants which are of no further use for decoration should be placed in a position where they may receive the full light, and be watered carefully. Reduce the quantity as the foliage dies off, and discontinue it altogether when the tubers are quite at rest. When the soil in the pots is dry, they may be laid on their sides under the stage in a house having a minimum temperature of from 55° to 60°. The above remarks also apply to Achimenes, Tydas, and Gesneras.

Euphorbia (Poinsettia) pulcherrima, and E. jacquiniiflora.—It is not advisable to leave these plants in unheated pits after this date. Both species should be afforded a minimum temperature of 55° for the present; but when the flower-

buds appear on *E. pulcherrima*, the plants may be placed in a house having a temperature of from 60° to 65°, in order to favour the production of large bracts. This may also be assisted by applications of Clay's Fertiliser. Now that the dull season is approaching, the supply of water to these plants should be reduced somewhat, as a sodden condition of the soil, accompanied by dull weather and low temperatures, would result in a loss of roots.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge
Park, Wantage.

Vines.—Houses that contain Vines that are required to furnish ripe Grapes early in May should now be got ready for forcing, which should be commenced about the first day of November. Glass, wood-work, Vine-rods, and borders should all be thoroughly cleaned, and put in the best condition possible. If this is done now, the house will have the advantage of perfect rest for a month previous to closing. It is often considered an advantage to possess inside borders only; I have been unable to recognise any material gain in this respect, having been successful with inside and outside borders combined. Some cultivators when forcing use fermenting material, such as fresh leaves and stable-litter, in the house to produce humidity and save firing. The utility of this practice I have never recognised, and do not recommend it.

Houses intended for forcing purposes should be well supplied with hot-water-pipes, and possess glass in good condition, in order to secure and maintain the conditions necessary for successful forcing. We do not adopt the practice of bending the rods to secure an even development of the buds, but prefer to fasten them temporarily in their permanent positions. During October the inside border should be well supplied with diluted liquid-manure, and given a moderate mulching of wood-ashes and droppings from the stables. During the following three months the daily use of the syringe will meet all requirements in houses properly furnished with means for providing artificial heat. Frequent applications of water at the roots during the winter months must be guarded against. In houses where hard firing is necessary during severe weather, frequent attention to damping will be necessary, especially in houses where the border is in close proximity to the pipes. The neglect of this simple precaution causes in many instances the early appearance of red-spider in the house.

THE APIARY.

By EXPERT.

The Honey-market.—Many bee-keepers in country districts who still adhere to the old-fashioned straw skeps, are beginning to complain that bee-keeping does not pay. The reason is not difficult to find, as many now are using box-frames for extracted honey, and this can be placed on the market clean and absolutely free from any brood or bee-bread. This is accomplished by placing a piece of excluder zinc over the brood chamber, allowing only the worker bees to get into the shallow frames, and thus prevent breeding. The same plan can be adopted, as far as the straw skeps are concerned, by cutting out a hole as large as a saucer from the top of the skep and placing a small piece of queen-excluding zinc over the hole, and securing the same by a few wire nails; some honey or sections can be thus easily saved. The imports of foreign honey run into the enormous sum of between two and three thousand pounds per month. Why cannot we prevent this? First, honey in liquid should be sold according to sample, and this should be of the best, and the bee-keeper able to guarantee it pure; he should also in extracting be careful to run the dark-coloured honey in an entirely different vessel to that which contains the lighter honey. What looks worse than for a dealer to have a consignment of honey sent him not according to sample, but containing honey of various colours? The sequel follows. The next season he goes to the foreigner for his honey, and the home bee-keeper then complains that bee-keeping is of no use in England because he cannot dispose of his surplus.

APPOINTMENTS FOR OCTOBER.

TUESDAY, OCT. 4	Royal Horticultural Society's Fruit Show in the Royal Horticultural Hall, Vincent Square (3 days).
WEDNESDAY, OCT. 5	Scottish Horticultural Association Meeting.
WEDNESDAY, OCT. 5	National Chrysanthemum Society's Exhibition at Crystal Palace (3 days).
FRIDAY, OCT. 7	German Gardeners' Club Meeting.
WEDNESDAY, OCT. 12	Royal Botanic Society's Show at Regent's Park.
TUESDAY, OCT. 18	United Horticultural Benefit and Provident Society (Annual Dinner).
THURSDAY, OCT. 20	Royal Horticultural Society's Committees Meet.
FRIDAY, OCT. 21	Brighton Horticultural Society's Meeting.
MONDAY, OCT. 24	German Gardeners' Club Meeting.
TUESDAY, OCT. 25	National Chrysanthemum Society's Floral Committee Meeting at Essex Hall.
THURSDAY, OCT. 27	Croydon Chrysanthemum Society's Show (2 days).
FRIDAY, OCT. 28	Exmouth Chrysanthemum Show.
	Royal Botanic Society's General Meeting.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY NEXT—
Ten Greenhouses, Piping, Lights, Brickwork, &c., at Woodbine Villa, Oakleigh Road, Whetstone, Middlesex, by Protheroe & Morris, at 12.
WEDNESDAY NEXT—
Palms, Plants, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 4.
WEDNESDAY and THURSDAY NEXT—
300,000 Fruit Trees and other Stock at The Floral Nurseries, Wisbech, Cambs., by order of Messrs. R. H. Bath, Ltd., by Protheroe & Morris, at 12.
FRIDAY NEXT—
Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—54°2'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 28 (6 P.M.): Max. 67°; Min. 49°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 29 (10 A.M.): Bar., 30.2; Temp., 56°. Weather—Dull.

PROVINCES.—Wednesday, Sept. 28 (6 P.M.): Max. 59°, South-West Coast of England; Min. 54°, Scarborough.

A Grand Novelty.

It is a curious coincidence that at the very time the news reached this country that a commercial treaty had been established between Great Britain and Thibet, there flowered for the first time in Europe a hardy plant introduced from the mountains of Thibet, which will be among the most valued Papaveraceous species in cultivation. In our issues for September 17 and 24 announcements were made that *Meconopsis integrifolia* was in flower in Messrs. BEE's nursery, near Chester, and in that of Messrs. JAS. VEITCH & SONS', Chelsea. In Messrs. BEE's case the seeds were obtained through the Koslov expedition sent by the Russian Government to Central Asia, but Messrs. VEITCH's plants were raised from seeds sent home by their special collector, Mr. E. H. WILSON, who is at present in Western China. We have frequently had occasion to express the indebtedness of horticulturists to Messrs. JAMES VEITCH & SONS for their enterprise in sending Mr. WILSON into Western China to collect new species of plants.

By the process of hybridisation we are constantly increasing the number of "new" plants, but for some years past, with the exception of Orchids, there have been comparatively few introductions of new species from their native countries. It is only

what we may expect as the field for exploration becomes smaller, and the area of untrodden ground on the earth's surface gradually disappears. Therefore it is all the more important that the most should be made of the opportunities that are still open to us, and in this respect the results of Mr. WILSON's two visits to the Far East are most gratifying. Some of the many species which Messrs. VEITCH have introduced by this means that occur to our mind, are *Davidia involucrata*, *Astilbe Davidii*, *Rehmannia angulata*, *Jasminum primulinum*, several species of *Corydalis*, *Senecio tanguticus*, *Buddleia albiflora*, several ornamental Vines, *Actinidia chinensis*, some new species of Conifers and other plants, many of which have been described in these pages.

One of the principal objects of Mr. WILSON's second journey was to obtain seeds of *Meconopsis integrifolia*; and how successfully he has accomplished his mission is described in a very interesting



FIG. 97.—*MECONOPSIS INTEGRIFOLIA*, SHOWING HABIT OF GROWTH.

(See also Supplementary Illustration.)

letter Messrs. VEITCH received last week, from which we have been permitted to make the following extracts. Writing from a town in Western China at the end of July, Mr. WILSON says:

"I returned safely yesterday after an absence of eleven and a half weeks. The trip proved the longest and most arduous I have undertaken.

I reached Tatién-lu by way of a small mountain road after twenty-one days' hard travel. After a few days' rest I made a trip to the Yalung river, 100 miles west of Tatién-lu. On returning I scoured the Tatién-lu neighbourhood, and finally left on the return journey on July 11 by the ordinary route. I enjoyed the best of health the whole of the time.

The journey from Tatién-lu to Yalung river proved to be a bigger undertaking than I expected. On the 19th of June we experienced a blizzard of snow and sleet the whole of the day. Snow lay thickly on the ground, and on the top of the pass (altitude 14,500 feet) it was over 3 feet deep. I was so numbed with cold that I could hardly sit in the saddle. My men suffered from the effects of the rarefied atmosphere and some had their toes frost-bitten. All of us suffered more or less from snow-blindness. We were a pitiable-looking party when we returned

to Tatién-lu; I had to turn family doctor for a time. I am glad to have had the experience, but never again do I want to travel in the mountains of Eastern Thibet. We travelled with ponies and yak, and were well received by the natives everywhere.

The highest altitude reached was 16,100 feet, which is practically the limit of vegetation seen on the more open tablelands or plateaux. The feature of these higher mountains is the wealth of Rhododendrons. I have written you much in praise of the Chinese Rhododendrons, but my pen is too feeble to paint you the picture as it really is. To see miles upon miles of mountain-side one blaze of Rhododendron-flowers is to see something better to be imagined than described.

It will also interest you to learn that *Primula japonica* is extremely common on the mountains west at an altitude of from 7,500 to 9,500 feet. It becomes every year more and more difficult to find new plants of high horticultural value; old friends are very plentiful now. This long trip just concluded has not resulted in as many 'good finds' as I had hoped for . . .

Turning now to the main object of our search in these wilds—*Meconopsis integrifolia*—I have nothing but success to report. I have found it in millions. The dried material in herbaria gives no real idea of the magnificent flowers this plant has. The flowers are often 8 to 10 inches in diameter, of a lovely bright yellow colour. I have seen on one plant as many as fifteen flowers expanded at one time. This, however, was exceptional. The usual number is from four to six. I counted the flowers and buds on fully a hundred plants and found they averaged eleven to each plant. The largest number was eighteen. The number of petals is often in excess of the normal five.

It is a common sight to see a thousand or more in full flower together. The species is never found below 11,000 feet, and 15,500 feet marks its upward limit.

From my more extended observations this year I have lost many of my fears in regard to its possible ill-behaviour under cultivation.

Treat it as a hardy, moisture-loving plant, give it a place in peaty or leafy soil, and I believe you will succeed. Whatever you do, do not coddle the plants, or you will kill them. Mother Nature is harsh in her woods and clearings in these mountain fastnesses. The plant is undoubtedly a biennial."

The following description of the species is based on FRANCHET's description in *Bull. Soc. Bot. France*, xxxiii. (1886), 389,* and on dried specimens in the Kew Herbarium.

The species is apparently a biennial, usually densely covered on all the green parts with long, slender reddish hairs, and furnished with a stout tap-root 6 inches long. Stem erect, 5–16 in. high, often stout, many-furrowed. Leaves mostly radical, in a rather dense tuft, usually linear-lanceolate, sometimes almost spatulate, 2–8 in. long, $\frac{1}{4}$ – $1\frac{1}{2}$ in. (usually $\frac{1}{2}$ – $\frac{3}{4}$ in.) broad; acute or shortly acuminate, rarely obtuse, entire, 3-nerved, narrowed at the base into a long, slightly winged petiole; cauline leaves few, similar to the radical ones. Flowers three to five, the uppermost one terminal and opening before the others, which are on lateral peduncles up to 4 in. long, sulphur-yellow, 3–8 in. (usually 4–5 in.) in diameter; petals suborbicular or broadly obovate. Stamens numerous; filaments glabrous, somewhat dilated towards the apex; anthers

* *Meconopsis integrifolia*, Franchet, l.c. *Catheartia integrifolia*, Maxim., in *Bull. Acad. Pétersb.*, xliii. (1877), 310.—Yunnan, in moist places on the snow-covered ridge Likiang, 13,100 feet; Delavay. West Szechuen and Tibetau frontier, near Tachienlu, 9,000 to 13,500 feet; Pratt. Kansu; Przewalski, Potaniu. Central Tibet, in the Goering Valley, about 16,500 feet; Littledale. North Tibet; Przewalski.

oval. Style convex-pyramidal, very short and thick, with five large radiating-decurrent stigmas. Capsule obovoid-oblong, $1\frac{1}{4}$ — $1\frac{1}{2}$ in. long, densely covered with adpressed, yellowish bristles, dehiscing at the summit by five short valves.

The wild specimens in the Kew Herbarium vary considerably in the height of the stems, the breadth of the leaves, the degree of hairiness, and the size of the flowers. In LITLEDALE'S specimen the flower is only 3 inches across, while in one of PRATT'S it is quite 8 inches. All the specimens agree in having a distinct stem bearing three or more flowers. In this respect the plant briefly described on p. 198 of the *Gardeners' Chronicle* for September 17, does not agree with the wild specimens, probably because the English-raised plants are weak. FRANCHET likened *M. integrifolia* to *M. simplicifolia*, but noted as a striking difference between these species that the latter has long one-flowered peduncles and an elongated style; it also has violet-purple flowers. MAXIMOWICZ, who first described the plant from specimens collected by PRZEWALSKI in 1872—73, as a *Cathcartia*, he not having seen mature capsules, mentions its resemblance to *M. nepalensis*, from which, however, it is easily distinguished by the entire leaves and few-flowered stems. *M. integrifolia* and *M. punicea*, another handsome species from Central Asia, differs from all the other species of the genus, so far as they are represented at Kew, in having the style so short and thick, and the stigmas relatively very large, giving the capsule an entirely distinct appearance.

Messrs. JAMES VEITCH & SONS have furnished us with two flowers from their nursery, which are sufficient to show the extreme beauty of this species, but are not characteristic in size, which is presumably due to the plants having flowered at the end of the summer instead of in the spring. The seeds were sown as soon as they were received. In colour the fresh specimens are clear, bright, but rather pale yellow, the anthers being of a deeper shade of yellow. The flower is not spreading, as we gather from these imperfect specimens, but of the globular form of a Tulip-flower, with imbricate, almost erect petals. The description Mr. WILSON has furnished of the conditions under which the plant grows naturally may assist cultivators in Europe in the attempts they will make to grow this species successfully in gardens. Our illustrations have been prepared from a coloured drawing made by Miss SMITH of the dried specimens in the Kew Herbarium.

ROYAL HORTICULTURAL SOCIETY'S FRUIT EXHIBITION.—It is owing to the erection of the new Hall that the great annual show of British-grown autumn fruit can this year be held in London. The first of this series of annual fruit shows was held at the Crystal Palace in 1894, and was repeated there each year up to 1903, when it was held in the Society's garden at Chiswick. It is anticipated that an exceptionally large and fine collection of fruit will be brought together on Tuesday next, October 4, in view of the heavy crops all over the country. The schedule of the show invites displays of fruit grown entirely out-of-doors and also from the orchard-house, from amateurs, nurserymen, and market growers. In the gardeners' and amateurs' division classes are provided for collections of ripe dessert fruit, including Pines, Grapes, Melons, Peaches, Nectarines, and Plums; for collections of Grapes, and for a collection of hardy fruits generally. There are numerous separate classes for fruits of every description, both for dessert and for cooking varieties. Special classes for different counties, arranged in groups for both Apples and Pears, are offered for amateurs' and gardeners' competition. The public will be

admitted to the show on October 4 at 1 P.M., and at 10 A.M. on the 5th and 6th, and it will be kept open until 10 P.M. on the first two days, closing at 6 P.M. on the third day. The charges for admission are 2s. 6d. on the opening day, and 1s. on the second and third days. Fellows of the Society will be admitted on showing their tickets. No exhibits not included in the schedule can be accepted in connection with this show, except fruit and vegetables for Certificate. The Fruit Committee will sit as usual at 12 noon on the first day of the show (October 4), but the Floral and Orchid Committees will not meet on that occasion. Nurserymen and market-growers, as well as gardeners and amateurs, will be allowed to compete in Class 55 for a single dish of "Charles Ross" Apples.

EXHIBITION OF COLONIAL FRUIT, AND OF PRESERVED FRUITS AND JAMS.—The winter show of the Royal Horticultural Society will be held in the new Hall, Vincent Square, Westminster, on December 13 and 14, and will be confined to colonial-grown and to preserved fruits. Classes are arranged for all descriptions of colonial fruits; and the preserved fruits will include jams, as well as bottled and dried fruits, separate classes being arranged for home, colonial, and foreign exhibits, the comparative value of which will thus be seen side by side. The show will remain open on both days until 10 P.M. The Agents-General and Crown Agents are rendering every assistance, and we trust that both growers and exporters will do their best to send in exhibits worthy of our Colonies, and to show what can be produced for the home markets. No entrance fee or charge for space is made, and if desired the produce may be consigned direct to the Society; it will then be stored in the cellars at Vincent Square, and staged by the Society in good time for the special private Press view on the evening of December 12; but the Society cannot undertake to re-pack and return such exhibits. We further learn that a second show of colonial fruit will be held in March or April, 1905, for such fruits as cannot be shown in perfection in December. Copies of the schedule and entry forms may be obtained on application to the Secretary of the Royal Horticultural Society, at Vincent Square, Westminster.

FLOWERS IN SEASON.—Messrs. JAS. VEITCH & SONS, Ltd., Chelsea, have sent us flowering spikes of their new species of *Aconitum*—*A. Wilsoni*, also of *Senecio clivorum*, and of *Clematis montana rubens*. The *Aconitum* produces numerous axillary flowering spikes after the main shoot has flowered, thus prolonging the flowering period. The flowers are violet-coloured. *Senecio clivorum* is a useful plant for producing an effect in such situations as the side of a lake, or in the "wild-garden." The species was figured in a Supplement to the *Gardeners' Chronicle* on September 20, 1902. *Clematis montana rubens* is a rosy-coloured variety of the species.

TELEGRAPH POLES.—It may appear inexplicable, says the *Timber Trades Journal*, why our home productions are entirely slighted for such a purpose as telegraph poles, especially when the wood required is common red Fir, or *Pinus sylvestris*, or, in other words, ordinary Scotch Pine. On making enquiries of the G.P.O. authorities, we understand that if any considerable quantity of poles could be obtained of the requisite quality in the British Isles, the home-grown would certainly have a distinct preference, as for one reason alone it would be much more convenient to the Post Office to obtain their supplies close at hand. They have, it appears, in years past, offered every facility to the home grower, but each attempt to do business has ended in dismal failure, owing to the inferior quality of the poles supplied. They are always open to favourably consider any parcel of Scotch Fir trees of home growth suitable for telegraph poles. In this we have an instance in

which the British timber grower has hitherto been oblivious to his own interests, and it is a point of great importance in favour of encouraging scientific afforestation. The annual supply of from 50,000 to 60,000 Scotch Fir telegraph poles, many of them of large dimensions, is not a mean object in itself to aim at, and even the prospect of only partially supplying the demand should act as a forceful incentive to land-owners who have and are taking up the great question of reafforesting their now uncultivated lands. We entirely fail to understand why these poles must be supplied by Norway, Sweden, or Russia, when it is possible to get them of the highest quality from the British Colonies of North America. There is an abundant supply of *Pinus sylvestris* (? *Strobus*) in Nova Scotia for instance, and for many years during the days of the old sailing ships practically the whole of the masts used in shipbuilding in this country were obtained from Canadian sources. The only point that can possibly operate against the use of Colonial poles in this country is the question of freight; but considering that it would mean the encouragement of Colonial enterprise, and for other reasons than this, it becomes a matter of imperative economy that practically inexhaustible forests should be exploited by diverting the supply to the British market and establishing an absolutely certain market. It is a fact of universal knowledge that the resources of Norway are steadily declining, and the exports from that country may only be available for a restricted period. It is also increasingly difficult to obtain the full quantities of telegraph poles required of the necessary cleanness and quality from the European countries, and if the responsible authorities have not assured themselves of a market in other directions, then they will be guilty of an egregious blunder for which there can be no excuse whatever.

RARE SHRUBS AT MENABILLY, CORNWALL.—In an interesting letter from Mr. J. RASHLEIGH, our valued correspondent informs us that there are growing in his garden at Menabilly two rare plants he received from New Zealand—*Coprosma pendula* and *Sophora tetraptera microphylla*. The former plant has reached a height of about 10 feet, having a spread of branches $4\frac{1}{2}$ feet in diameter, the stem being $5\frac{3}{4}$ inches in circumference. The *Sophora* is $8\frac{1}{2}$ feet high with a head 5 feet through, the stem measuring $3\frac{3}{4}$ inches in circumference. The leaves of this variety are exceedingly small in size. Both the plants are quite hardy in Cornwall, having been grown out-of-doors for several years unaffected by frost. There is also at Menabilly one of the finest examples of *Litsea reticulata*. This plant is about 35 feet high, with a spread of branches 36 feet in diameter, the head measuring 86 feet in circumference. Close to this tree is a specimen of *Cordyline australis* $23\frac{1}{2}$ feet in height, and possessing a stem 3 feet 3 inches in circumference.

BANANAS.—There would appear to be no diminution in the demand for this fruit; literally, it would seem to be in everybody's mouth. The demand is increasing, and of the fruits themselves the cry is—still they come! On Friday and Saturday in last week the principal streets of the metropolis were richly supplied with Bananas—street hawkers were everywhere, and evidence there was on all sides of large arrivals from the West Indies. Good fruits were procurable at three a penny—larger ones sold at 6d. for a bunchlet of twelve. As our readers are aware, the monthly record of imports proves the truth of our remarks. The fact that more steamers are to be placed on the West Indies line is proof sufficient that an extension of the trade is confidently anticipated—in connection, doubtless, with an increase in the supply of Cotton consequent on an extension of the area of growth.

As for the supply of the fruit, the returns from which our monthly figures are derived, show that in the past eight months we imported 2,492,702 bunches, compared with 2,041,835 in the same period last year, and some 1,650,992 bunches for the same period in 1902. As to the increased means of transport, the information which reaches us is to the effect that Messrs. ELDER & FYFFES, Limited, have just placed orders for three new steamers for the carriage of the fruit. These steamers, with a measurement of 4,500 tons, will each carry about 50,000 bunches of Bananas. We wish every success to the fruit fleet.

THE CHRYSANTHEMUM CONGRESS AT MONTPELLIER.—The following are the subjects proposed for discussion at the Montpellier Congress on October 29 and 30:—

1. The effects of sulphate of copper on the foliage of Chrysanthemums.
2. Influence of an excess of nitrogenous manures on the general condition of the Chrysanthemum.
3. Sports; their characteristics, means of producing and fixing them.
4. Transport of plants and flowers to and from exhibitions.
5. Effects of bisulphide of carbon on the eelworms of the roots.
6. Effects of sterilisation of the soil on Chrysanthemum-growing.
7. Insects or diseases attacking the Chrysanthemum.

In addition to these questions, the Committee will willingly add to the day's programme any that may be submitted by the members of the Society. Members are therefore particularly requested to signify to the Secretary the subjects that appear to them most worthy of consideration at the approaching Congress. At the same time those proposing to submit papers are reminded that in accordance with a decision arrived at in Orleans, and in conformity with the customs of the Society, such papers should be forwarded before October 15 to the Secretary, in order that they may be submitted to a Chrysanthemum expert, chosen by the Committee, to make a general report on the several papers submitted dealing with either of the above questions. The discussion will then be opened in accordance with the decision of the reporter, and will therefore be shorter, more to the point, and consequently more acceptable to the hearers.

DRUGS AND PERFUMES FROM ADEN.—It has recently been pointed out that from Aden four drugs are exported which are not shipped from any other port, namely, "aloes, civet, myrrh, and incense." All of these are important articles of commerce, so far as actual values are concerned, but their values are more in the light of perfume than that of drugs, aloes being alone perhaps a true drug, and of this it is interesting to learn that during the year 1903 the exports of Socotrine aloes from Aden amounted to 31,696 lb. Of this quantity, 29,120 lb. were sent to Europe, chiefly to the London market, the remaining 2,576 lb. being exported to Bombay. In consequence of myrrh not being classified by itself, as is the case with many other gums, but being lumped together under "Gums and resins of other sorts," the exact amount of myrrh shipped cannot be ascertained, but it is considered that the quantity exported amounted for the year 1903 to about 1,344,000 lb. Under the head of incense it is probable that olibanum is meant, which is the produce of *Boswellia Carteri*. The harvest of this gum is said to yield from 2,240,000 lb. to 3,360,000 lb. It is gathered in the autumn and brought to market during the winter months. It is extensively used all over the Orient. Bombay is one of the principal distributing points, and last year 1,493,744 lb. were shipped to that port, and 1,426,880 lb. to the European ports, chiefly Marseilles and Trieste. Civet being an animal product does not correctly come under our notice, but we may say that in consequence of its limited production and high

price it is usually extensively adulterated with lard, butter, and other greasy substances. The annual production amounts to only from 250 to 300 lb., and about one-half of this quantity goes to New York.

THE LIVERPOOL HORTICULTURAL ASSOCIATION will hold a Chrysanthemum and fruit show on November 16 and 17; and a spring flower show has been arranged to take place on March 29 and 30, 1905.

HORTICULTURE IN THE TRANSVAAL.—A report of a meeting of leading horticulturists held at the Grand National Hotel, Johannesburg, on Saturday, September 3, is published in the *Transvaal Leader* for September 5. The meeting was convened by Mr. Alfred Chandler, the originator of a scheme for uniting and developing South African horticulture and allied interests. With him was associated Mr. Julius Jeppe, and there were present, among others, Messrs. C. F. Cooper, F. Frith, J. Dowie, O. Menzel, A. M. Nelson, C. E. Nelson, W. D. Esnouf Greet, J. Barrel, Martin, A. Campbell, J. H. Denecker, James Hall, J. Pender, W. J. Sturm, Gordon, Kerschoff, A. H. Joseph, J. Bransgrove, and G. T. Weeks. After some discussion the Chairman moved that a Society be formed under the name of "The Horticultural Society of South Africa," with the addition of the prefix "Royal" when a charter had been obtained. The motion was carried unanimously. It was agreed to invite H.E. Viscount Milner, the High Commissioner, and Sir Arthur Lawley to become patrons of the Society, and the chief citizens of the Transvaal to become vice-presidents. Mr. Julius Jeppe was unanimously appointed president; Mr. Woolbridge, chairman; Mr. Bailey, treasurer; Mr. Alfred Chandler, corresponding foreign secretary, and Mr. G. T. Weeks, secretary. An influential Council was also appointed, selected from leading horticulturists in the Johannesburg and Pretoria districts. It is intended to hold spring and autumn exhibitions, and to secure an experimental garden. Such a Society has been long needed, and the business-like commencement augurs well for its future.

BRITISH GARDENERS' ASSOCIATION.—At a meeting of the Committee of this Association, held on the 23rd ult., it was decided to send delegates of the Committee to address public meetings of gardeners in some of the large towns and centres, and to take immediate steps for the formation of local branches of the Association. It was also decided to print at once a certificate of membership and list of rules, to be forwarded to all accepted candidates, and that annual subscriptions paid this year will be counted as for next year, before which the Association will not be in proper working order. Up to the present over £160 has been received as subscriptions and donations, and about £70 more has been promised. All who are interested should carefully read the Prospectus accepted by the great meeting held in Essex Hall in June last, for it is clear that most of the criticisms and suggestions made through the Press and in correspondence have been made in ignorance of the real character and aims of the Association. Copies of the Prospectus and Forms of Application for membership may be had from the Secretary, Mr. W. WATSON, Kew Road, Kew.

TRAFALGAR DAY.—We are informed that the Navy League has selected the design of Mr. G. W. BELLGROVE, Outdoor Floral Manager to the Junior Army and Navy Stores, for the decoration of the Nelson Column on Trafalgar Day, October 21 next.

PUBLICATIONS RECEIVED.—*Gardening for the Million*, by Alfred Pink, published by Mr. T. Fisher Unwin.—*Agricultural Returns of Great Britain, 1904*, being a preliminary statement for 1904, compiled from the returns collected on June 4, and comparison with 1903.—*Twenty-ninth Annual Report of the Board of Commissioners*

of the City of Boston Parks, U.S.A., for the year ending January 31, 1904.—*The Estate Magazine* for September contains instructive articles on the management of estates.—*An Indian Garden*, by Mrs. H. C. Eggar, published by John Murray, price 7s. 6d.—*Report on the Habits of the Kelep or Guatemalan Cotton-Boll Weevil*, by O. F. Cook, published by the U.S. Department of Agriculture, Washington.—*Fertilizer Bulletin*, by Floyd W. Robison, issued by the Michigan State Agricultural College Experiment Station.—*Hereditarily in Bean Hybrids (Phaseolus vulgaris)*, by Professor R. A. Emerson, being an excerpt from the Seventeenth Annual Report of the Agricultural Experiment Station of Nebraska, distributed in August, 1904.

PLANT NOTES.

DRACÆNA VICTORIA.

This new, bold, and graceful *Dracæna* is superior in breadth, shape, and colouration of leaf to all varieties (including *D. Lindenii*) that I am acquainted with; the recurving leaves, with wavy margins, are of a bright golden yellow colour, with a broad central band of bright green, adorned with narrow streaks varying in colour from greyish to creamy-white. A plant of *D. Victoria* was a conspicuous feature in the Gold Medal group of new and rare plants arranged by Messrs. James Veitch & Sons at the recent Shrewsbury show. It was about 4 feet high, and beautifully coloured. There were also smaller specimens included in the first and second prize groups of new and rare plants staged in Messrs. William Bull & Sons' Silver Cup class.

The plant may be propagated in the same manner as the older varieties by severing the stem an inch or two below the bottom pair of leaves and inserting the detached portion in a bottle of water placed in a shady part of the plant stove, in which position roots will issue from the immersed stem within the space of a week or ten days. When the cutting has rooted thus it should be taken out of the bottle and firmly potted in peaty soil, with a liberal addition of silver-sand. In time the stems of the original plants, which should be kept moderately dry at the roots, will produce growths from the sides, which, when large enough, can be detached with a "heel" and inserted individually in small bottles containing sufficient water to cover the cuttings—about 1 inch from the base, these being placed in the plant stove and afterwards treated as advised above. The above method is the quicker way to increase *Dracænas*, but to propagate the plants in large quantities the stems may be cut into pieces about half an inch in length, the portions being halved down the middle, and placed with the flat side down in efficiently crooked pans or boxes filled to within half an inch of the top with peaty soil surfaced with silver sand. The pieces of stem should be pressed firmly into the soil and covered to the depth of nearly half an inch with a mixture of fine peat and silver-sand. The pans should be placed over hot-water pipes, and water must be given through a fine roset can in order to settle the soil, afterwards cover the pans with a piece of glass. A large percentage, if not all, of the individual "eyes" will push into growth, if the soil is kept uniformly moist all the time. At this stage of growth the glass should be tilted so as to accustom the plants to the conditions of the stove before being potted into small 60-sized pots.

In the case of *Dracæna Victoria* there are no old leggy plants available for propagating in the manner indicated above, but an increase in the stock may be attained by cutting half-way through the stems of those plants having a bare stem of from 4 to 6 inches from the pots. Bend the stem back and place some sandy soil between the wounds, and then bind some damp moss round the wounds and keep this uniformly moist until roots are emitted, when the plant can be detached from the parent stem and potted as recommended above. Young growths will also proceed from the old stem, and these should be treated as already described. *H. W. Ward, Lime House, Rayleigh.*

BEGONIAS.

AMONG the numerous exhibits of tuberous-rooting Begonias that have been shown at the exhibitions during the summer months, those of Messrs. Blackmore & Langdon have been conspicuously good in quality. At fig. 98 we have reproduced a photograph showing the plants flowering in one of the firm's glasshouses in the nursery at Twerton Hill, near Bath, and it will be seen that the flowers are of large size and excellent form.



FIG. 98.—TUBEROUS ROOTING BEGONIAS IN THE TWERTON HILL NURSERY, NEAR BATH.

meshed sieve, and mixed with about one-third of sharp silver-sand. Sow the seeds on the surface of the soil, and cover them with a thin layer of silver-sand. Place the pots or pans in a warm-house, and afford bottom-heat. The young plants will appear above the soil in about three weeks. As soon as they are large enough to handle, transplant the young plants, using the same light soil. At the beginning or end of April the plants will be large enough to be transplanted again into a warm frame or pit furnished with a light and sandy soil. Afford water with

Madonna dell' Arena, in Padua. The bank was perhaps 15 or 20 yards long, and half or two-thirds that in height, and of steep incline. It was thickly planted with different sorts of Bamboos, which were allowed to grow in their own way, and the growth of one over the other up to the top was very effective. In England we grow them on the flat, or even in a hollow; but what I saw to-day makes me think their growth on steep banks is worth trying. Henry N. Ellacombe (at Venice), September 22.

SINNINGIA REGINA.

Immediately on receiving this new plant I made crosses with other members of the Gesneria family, and was successful in obtaining a number of hybrids. The latter bear flowers considerably larger, in some cases more than double the size of those of the species, and not quite so drooping. They vary in colour from light rose to pale and deep lilac, adorned in some cases with a pure white throat. I think that by working on these plants we may look forward to the production of further hybrids of great interest. Ernst Benary, Erfurt.

FUCHSIAS WITH WHITE COROLLAS.

Permit me to make a small contribution to the history of Fuchsias having white corollas, to which "R. D." alluded in the *Gardeners' Chronicle* for September 24, p. 221. In the year 1855 there was published in the *Flore des Serres*, vol. 10, p. 13, an illustration of two varieties possessing white corollas, including that of Queen Victoria, mentioned by "R. D.," and the variety Mrs. Story.

It appears, however, that Fuchsias with white corollas were already numerous at that time, in France at least, for I read in the *Revue Horticole* for 1856, p. 435, that at the exhibition of Laval M. Georget exhibited a collection of Fuchsias with white corollas, which included sixty good and choice varieties. G. T. Grignan, Paris, September 26.

SOILS AND MANURES FOR SPECIAL CROPS.

(Continued from p. 147.)

THE TOMATO.—The extensive use of the Tomato as an article of food has caused this crop to develop into a very important industry.

A study of the composition of both the fruit and vine of the Tomato will serve to guide us in determining its manurial requirements, though the amounts and proportions of plant-food removed by any crop are not absolute guides, inasmuch as the soil may furnish more of one constituent than another, and because the plant may have the power of acquiring certain of its constituents more readily than others. According to Professor E. B. Voorhees, the analysis of the fruit and vines of Tomatos shows that 1 ton contains:—

	Nitrogen.	Phosphoric acid.	Potash.
In Fruit	3.2 lb.	1.0 lb.	5.4 lb.
In Vines (green) ...	6.4 "	1.4 "	10.0 "

Ten tons of the fruit, with the accompanying vines, which would probably reach 4 tons, would contain 57 lb. of nitrogen, 16 of phosphoric acid, and 94 of potash. On a good soil, therefore, which without manure would produce 5 or 6 tons, there should be added a sufficient excess of the constituents to provide for a maximum production, and the materials should be relatively richer in nitrogen and potash than in phosphoric acid.

SOIL AND MANURE.

According to many growers the character of the soil for forcing house Tomatos is not a matter of great importance. It is necessary that there be good drainage, but both light and heavy soils

FOREIGN CORRESPONDENCE.

STREPTOCARPUS WITH ERECT FLOWERS.

I AM sending you a few flowers of my new erect-flowering strain of Streptocarpus that I have named Streptocarpus hybridus erectus. For several years I have cultivated the Streptocarpus hybrids in great quantity. A few years ago I noticed plants that produced flowers standing upright in a similar way to the erect-flowering Gloxinias. Great care has been taken to "fix" this strain, and also to obtain all the shades and markings that are noticed in the older type with drooping flowers.

There are few plants that can be cultivated so easily. The seeds can be sown about the end of January or in February in well-drained pans or pots, or in boxes, which should be filled with a porous soil, consisting largely of peat or leaf-soil. The soil must be passed through a fine-

extreme care at first, but later on the plants will require a greater quantity. Syringe them during bright weather twice or three times each day, and afford them shade from strong sunshine. By the middle or end of June the first flowers will be open, and the plants will continue to flower uninterruptedly for a long period. It should be well known that Streptocarpus hybrids may be transplanted without any risk at any time. Fully developed flowering plants, if transplanted and placed afterwards in a warm-house, will receive no injury whatever. Frederick Roemer, Quedlinburg, Germany.

[The flowers received were of rather small size, but were quite erect, as our correspondent has described them. ED.]

BANKS FOR BAMBOOS.

I should like to advise growers of Bamboos to grow them on a bank. I have seen to-day a large patch of Bamboos so grown in the Garden of the

have been used with good results. Nevertheless, those who get probably the best results commonly use a light sandy loam.

A compost—unused for many crops—consisting of three parts light sandy loam and one part well-rotted horse manure, serves very well for Tomatos. The proportion of manure in the soil has been considerably varied, but the results as published do not appear to differ in proportion to the variability of the compost. In addition to stable manure, dried blood is often added to the compost at the rate of 100 pounds to every 5 cubic yards of compost.

When good stable-manure is not available for the compost an excellent soil may be obtained, according to Voorhees, by adding to every 100 square feet of bench the following fertilizers: nitrate of soda one-half pound; superphosphate one pound; sulphate of potash one-half pound. This holds good until the fruit begins to form, when it is well to give one-fourth pound of nitrate of soda every week, and every two weeks one pound of superphosphate and one pound of sulphate of potash. These may be applied in solution, or sown broadcast between the plants and well worked in before watering. Highly satisfactory results have been obtained by using coal-ashes and 5 per cent. of peat moss added with various fertilisers. This method has been productive of a yield of two or more pounds of fruit per square foot of bench surface. By such methods it has been shown that the vine and fruit of single-stem plants can take up the following ingredients per hundred square feet of bench: nitrogen 168 grams, equivalent to nitrate of soda 2 lb. 5 oz.; phosphoric acid 65 grams, equivalent to high grade superphosphate 13 oz.; potash 362 grams, equivalent to sulphate of potash 1 lb. 9 oz. Of this amount nearly four-fifths go to form the fruit. Analyses show that each crop of 100 lbs. of Tomatos removed from the soil, nitrogen 2½ oz., equivalent to nitrate of soda 14 oz.; phosphoric acid 1½ oz., equivalent to superphosphate 5 oz.; potash 4½ oz., equivalent to sulphate of potash 10 oz.

It is estimated that in the case of Tomatos grown on ordinary compost the relation between the fertiliser taken from the soil by the fruit and vine is rather different from that given above for coal-ashes and peat. In the case of compost plants about half of the fertiliser removed by the plant, is found in the fruit. Hence, if the vine and roots be returned to the soil a very considerable part of the fertiliser applied may be recovered.

It is, however, well known that a large part of the manure offered is not taken up by the Tomato. The estimate is that not more than from one-half to two-thirds of the fertiliser furnished is taken up by the plant. According to Lawes and Gilbert at Rothamsted, only 40 per cent. of the fertiliser furnished is taken up during the first year. Accordingly more manure must be added to the soil than the plant actually removes, as shown above. Sunlight is another factor to be considered in applying fertilisers for indoor cultures. During the darker months of the season metabolic activity is at a considerably lower ebb than during the brighter months (February to July), and hence during this brighter period more manure can be absorbed by the plant, and assimilation is more active. During such a bright season it has been found that the Tomato will take up the following amounts per 100 square feet of bench:—Nitrogen 226 grams, equivalent to nitrate of soda 3 lb. 10 oz.; phosphoric acid 74 grams, equivalent to superphosphate 1 lb.; potash 391 grams, equivalent to sulphate of potash 1 lb. 12 oz. Of this amount less than two-thirds was contained in the fruit.

It seems that there is but little danger of over-feeding the Tomato. Still, while abundant fertilisers may not be injurious to the crop, there is a point beyond which manuring is needless; that

is, feeding up to a certain point produces a larger and better crop, but beyond this, although the plant may take up all that is offered without diminishing the yield of fruit or even injuring its quality, it is manifest that feeding above this optimum point is waste. So the mere fact that the plant will take up a certain amount of manure is not in itself sufficient evidence that that amount of fertiliser is required. Of course there is a point to go beyond which it is not only waste, but will result in injury to the crop. J. J. Willis, Harpenden.

(To be continued.)

DEUTZIA SCABRA.

The members of the genus *Deutzia* are some of the most difficult to determine of all the numerous genera belonging to the Saxifragaceæ, so



FIG. 99.—*DEUTZIA SCABRA* (THUNB.); FLOWERS WHITE.
Photographed from a Spray grown in the Arboretum, Kew.

numerous are the intermediate forms connecting the bulk of the species. *D. crenata* is one of these, slight forms of this species having been figured in several works under the name of *D. scabra* and *D. Fortunei*. The plant known in gardens under the name of *D. scabra* is *D. crenata*. The true *D. scabra* is a weak-growing plant of loose, spreading habit, seldom reaching more than 2½ feet in height. The flowers are produced in late May and June, and from its habit of starting into growth in early spring, the species is extremely liable to be cut by late spring frosts. The past season, however, was a very favourable one for many tender shrubs at Kew, and *Deutzias*, amongst other plants benefited greatly by the mild winter and spring, most of the species and varieties grown flowering freely. *D. scabra* is a fine species when seen at its best, and although too tender for general culture, it is well worth some special care in the way of protection after

growth has commenced in spring. No doubt it will thrive freely in the milder parts of Britain, where the climate is influenced by the beneficial effects of the Gulf Stream, and where late spring frosts are seldom experienced. The flowers are pure white, about one-half inch in diameter, and are borne in short lateral racemes from the previous season's growth. The leaves are elliptic-ovate, 3 to 4 inches in length, and 1 to 2 inches in diameter, dull green above, light green below, margins coarsely serrate. Fruits small, globose. The leaves, calyces, and fruits are covered with closely adpressed, stellate hairs. Chas. P. Raffill.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

NOTE FROM A WEST SURREY GARDEN.—This season of 1904 has been a remarkable one for luxuriant growth and for the flowering of several plants not usually seen in English gardens. In the garden of which I have charge, at Clare Lodge, Rowledge, the Australian *Acacia dealbata*, already as high as the chimneys of the south-west gable against which it is loosely trained, produced in the spring a profusion of its yellow silk-like blossoms, reminding one of the Italian Riviera; since then *Desfontainea spinosa*, *Eucryphia pinnatifolia*, *Tecomas*, a hardy species of Orange, hardy *Abutilon*, Pomegranate, white Indian *Azalea*, red and white *Camellias*, *Grevilleas*, *Azara*, and a white Passion-flower, have flowered. On September 18 a variety of *Banana* (*Musa*) commenced to open its fourth whorl of flowers and fruit, and is, as far as I know, the only specimen of this plant which has fruited out-of-doors in this district. The fruit is still very small, and I fear will not approach perfection unless we have a rare continuance of dry, sunny weather. The *Banana* has been out-of-doors during four winters protected by a coat of bracken, and is now somewhat disfigured owing to a high wind that occurred a week or two ago, which tore the handsome leaves. The fruit-stalk comes from the main stem at the height of 5 feet 8 inches from the ground. The tips of the leaves reach to 9 feet in height. William Tidy. [A photograph of this *Musa* which accompanied the above note is unsuitable for reproduction. Ed.]

LILIUM AURATUM IN CORNWALL.—I have lately been staying with my brother, Mr. G. J. Cookson, Trelissick, Truro, Cornwall, and whilst there I was very much struck by the beauty and size of *Lilium auratum* as grown there. The stems were between 9 and 10 feet high, and the flowers very large. I understand that there have been as many as twenty-two flowers on one spike in one of these clumps. It would be interesting to know if any of your readers have seen anything to equal or surpass these flowers under similar circumstances, for the place in which they grow is practically wild and uncultivated: the plants grow in the grass under the trees. H. Theodore Cookson.

AN INTERESTING TRIAL OF POTATOS.—I went to Bassaleg, Monmouth, recently, to see a very ordinary trial of some twenty-six commonly grown varieties, which Mr. Basham, the well-known fruit grower, had collected. The tubers were all of Scotch seed, for even in that comparatively moist district it is found that Scotch tubers give far better results than do locally grown tubers. The soil was of an ordinary sandy or stone brash loam, had previously been moderately dressed with horse manure, and when the tubers were planted a liberal dressing of wood ashes was added. There were several rows of 30 feet length of each variety, the plants being but 2 feet apart, which was certainly too close. In any case all had the same treatment. Ten plants only of each variety were lifted, the produce, less chats or any diseased ones, being carefully collected and weighed. There was very little disease, no specially large tubers, good table samples predominating. The scales showed that *Evergood* gave the highest weight with 25 lb.; *Dalmeny Beauty* had 23 lb.; *Lyne Gray* 20 lb.; *Epicure* 19 lb.; *Empress Queen* 19 lb.; *Duke of York* 17 lb.; *Sir J. Llewellyn* 17 lb.; *The Factor* 17 lb.; *Up-to-date* 16 lb.; *King Edward VII.* 16 lb.; *Cigarette* 15 lb.;

Royal Kidney 15 lb.; General Roberts 14 lb.; Ninety-fold 14 lb.; Herd Laddie 14 lb.; Sutton's Seedling 13 lb.; The Crofter 12 lb.; Empire Kidney 12 lb.; Northern Star 11 lb., though having strong tops. Six other varieties yielded lesser quantities. When eight varieties, selected by the gardeners present to see the lifting, were cooked, the best were found to be Empress Queen and Dalmeny Beauty. It is very probable that some robust-growing varieties were checked in growth by the closeness of the rows. Mr. Basham has been so greatly interested by the trial that he purposes conducting a larger one next year, but giving the plants much more of room. The value of ample leaf area to Potatoes is not sufficiently regarded as

polished green colour. As the foliage droops slightly, the shining green of the great leaves is well displayed. The texture of the foliage is very leathery, and it is not uncommon for individual leaves to remain in a perfectly fresh condition for six or seven years. When well established, strong, Asparagus-like shoots are thrown up from the root-stock that will attain in a few months to a length of 40 feet or more. It forms a splendid pillar plant in a cool structure, and there is a good specimen growing in this manner in the Temperate-house at Kew. Its flowers, which are sulphur-white, are small and inconspicuous, but are interesting, being produced at the edges of the leaves. The blossoms are followed by red

THE GEAN TREE.—In reference to the remarks of your correspondent, Mr. Chas. Francis, Aberdeen, on p. 63 in regard to the wild Cherry (Gean-tree), we have here a much larger specimen than the one illustrated. Its height is 56 feet, and the tree has a spread of branches 64 feet. The girth of the trunk at the ground-level is 12 feet, girth at 10 feet from ground 8 feet 4 inches. Wild Cherries grow everywhere amongst the Oak in these woods. There are seedlings from one year to eighty years of age growing on stiff loam and clay. During October the many clumps, with their wealth of crimson foliage, appear like fires in the wood of this neighbourhood. *M. Nicholls, The Gardens, Alice Holt, near Farnham, Surrey.*

ECHINOCEREUS ACIFER, LEMAIRE.

The subject of the accompanying illustration (fig. 100) is not rare in gardens, as the species is frequently imported. The stems are erect, about 6 to 8 inches high, and about 2 inches in diameter. They commonly shoot from the base, and form patches. The species somewhat varies in regard to its spines and flowers. The flowers are very pretty, although not abundant. They are about 2½ inches long, funnel-shaped, and scarlet in colour. They remain open several days. The genus *Echinocereus* was established by Dr. Engelmann, but he himself reunited it with the genus *Cereus*. In this he has been followed by many authors, and by the *Kew Index* and *Kew Lists*. Nevertheless, the genus is distinct, and can claim the right to be preserved.

As Schumann in his monograph of the family shows, all the members of the genus *Echinocereus* are well characterised by their habit of growth, their spiny ovary, the short tube of their flowers, and their green stigmata. The stems are of a much more delicate nature than those of most species of *Cereus*. *Echinocereus acifer* is a native of Mexico. *Alwin Berger, La Mortola.*

THE SPECIES OF CHAMÆDorea WITH SIMPLE LEAVES.

(Continued from p. 202.)

3. *C. (Euchamædorea) amabilis*, Wendland, *n. sp. —This fine new species was found by the author in the damp forests of the Sarapiquí Valley, near San Miguel, in Northern Costa Rica. It has, like the foregoing, a simple stem of 1–2 m. in height and 5–8 mm. in thickness. The annulated cicatrices of the fallen leaves are 4–6 cm. distant each from the other. The dark-green, mostly horizontally spreading leaves have a length of 40–50 cm., of which the cylindrical closed sheath measures 10–13 cm., the petiole 3–10 cm. Sheath and petiole bright green, striated on the lower side. The thin lamina is oblong or elliptical, 25–30 cm. long, 13–17 cm. broad at the apex, ¼–½ incised. The main rachis bears on each side twenty to twenty-four primary veins. The outer margin is on the upper part only strongly crenate or serrate. The lobes are sigmoidly curved. The spadix is very thin, 30–40 cm. long; the female one simple or bifurcate, with 15–22 cm. long densely-flowered rami; the male one with five to six rami of 20–25 cm.

I am doubtful whether this species is still in cultivation, as the plants once grown at Herrenhausen are no longer alive. But as this species is found in Costa Rica, it could easily be introduced into gardens again. The leaves in size and shape somewhat resemble those of *Chamædorea Ernesti* Augusti, Wendl., but the species may be easily distinguished by the sigmoid lobes of the leaves, their thin texture, and their thin stem. Besides these differences, the number of the primary veins is a marked characteristic.

* *Chamædorea amabilis*, Wendland, n. sp.—Lamina apice unam quartam usque ad unam tertiam partem bifida, lacinis late ovatis, repando-acuminatis, margine exteriori grosse serrato-crenato.



FIG. 100.—ECHINOCEREUS ACIFER: COLOUR OF FLOWERS, SCARLET.

a rule. We have found in connection with the National Potato Society's trial of twelve sorts this year in Surrey, that widths of 30 inches between the rows, the sets being in the rows from 16 to 18 inches apart, give good average space, and admit of the production of fine robust growth and a large quantity of good medium-sized tubers. Absolute fairness marked the whole of the Bassaleg trial. *A. D.*

SEMELE ANDROGYNA.—This fine climbing plant, introduced nearly 200 years ago, and perhaps better known as *Ruscus androgynus*, is but rarely met with in gardens, though it proves quite hardy in the south-western counties of England. It is a native of Madeira and the Canary Islands. In the first-named island it is said to add much to the beauty of the landscape, and to be especially handsome when wreathing the stone-work at the entrance to quintas. The leaves, or cladodes, are from 18 inches to 2 feet in length, and are furnished with from twelve to twenty pinnate sections, which are of a brightly-

fruits. In Cornwall it has both flowered and fruited in the open air. *S. W. Fitzherbert, Devonshire.*

THE PLANET, JR., HOE.—In answer to "Enquirer," on p. 209, I may say that I have used the plough for earthing up Cabbage and other green crops, and find it a success, but the two-wheeled hoe answers better for that purpose. When I recommended on p. 174 the single-wheel hoe, I referred to the keeping down of weeds, &c., during the summer months. I have had no experience with the seed drill, having only the combined hoe, &c. But probably some correspondents would give their experience in respect to the seed drill. There is one more item I would like to mention to "Enquirer" respecting the Planet, Jr., Hoe, as I find that every man is not successful with it. Try several men, and keep the handiest for using the hoe. "Enquirer" will then soon prove that the Planet, Jr., is in no way over-estimated by me in the *Gardeners' Chronicle* of September 3, p. 174. *A. F. G.*

4. *C. (Eleutheropetalum) Ernesti Augusti*, Wendland, in Otto and Dietrich, *Allg. Gartenz.*, 1852, p. 73).—This is one of the noblest species of *Chamædorea*. It is widely distributed in Central America. J. Linden found it near Tabasco, in New Granada, Von Warscewicz in Eastern Guatemala, Ghiesbreght near Chiapas, Galeotti on the Cerro San Martin, in the province of Vera Cruz, at an elevation of about 1,000 metres. In former times it was cultivated in the gardens under the names of *Chamædorea simplicifrons*, *Geonoma latifrons*, and *Hyospathe elegans*, hort. (non Mart.). It is a hardy Palm, easily grown from seed, and is still widely distributed in collections. The simple stem attains to a height of 2.5–3.75 m.; it is stiff, erect, about 2.5 cm. thick, annulated at distances of about 5 cm., and bears a crown of six to eight large chartaceous dark-green leaves, which have a total length of 70–85 cm. The sheath is closed, ovate-oblong, 13 cm. long; the petiole 8–16 cm. long, the lamina 50–55 cm. long, 40–45 cm. broad, obovate, at the base often cuneate-angustate, at the apex one-third incised. The main rachis bears on each side sixteen to twenty primary veins. The outer margin is on the upper part only coarsely-serrate. The divergent lobes are ovate. The male spadix is much ramified, the female one simple, bifid or divided into three to four ramifications. The male flowers are orange-coloured. The young inflorescences are glutinous.

I received this fine Palm, a male specimen, some years ago, under the name *Chamædorea formosa* (not *Gardeners' Chronicle*, 1876, i., p. 124). This species is very hardy, and well adapted for greenhouse decoration, and has the most leafy crown of all *Chamædoreas*.

5. *C. (Nunnezharia) rigida*, Wendland, n. sp.*—This is a Mexican species, found by Galeotti near Oaxaca. Unfortunately, the collector gave no information as to the growth of the stem. It is nearly allied to *Chamædorea Liebmanni*, Martin, especially to the variety *lepidota*, Wendland (= *Ch. lepidota*, Wendl.). The leaves have a length of 47–60 cm. The sheath is 12–15 cm. long, shortly closed at the base, very stiff and hard, almost woodlike. The petiole is very short, only 1 cm. long, or sometimes wanting. The obovate lamina has a length of 35–45 cm., is cuneate-angustate at the base, down to the middle, incised at the apex, very stiff. The main rachis bears 14–15 primary veins on each side. The lobes are elongate-triangular, 19–22 cm. long, at the base 6–7 cm. broad, and at the apex only minutely serrate. The female spadix (which only is known) is 40–50 cm. long, and bears at the apex five short thin ramifications, only 5 cm. long.

6. *C. (Nunnezharia) pumila*, Wendland, n. sp.†—Wendland detected this dwarf species at the foot of another new Palm, which on the contrary is a giant, viz., *Iriarteagigantea*, Wendland, in northern Costa Rica, in the valley of the Sarapiquí river. It attains a height of about 1 metre. The simple stem, at first ascending, later decumbent, attains a height of no more than half a metre, and is 8–12 mm. thick, densely annulated, and at intervals set with roots. The crown is formed of six to eight leaves, which have a length of 35–45 cm. The sheath is closed at the base only, somewhat stiff, at the margins somewhat lacerated and not distinct from the petiole; the sheath and the petiole have a length of 13–15 cm. together. The elliptical lamina is about 30 cm. long, somewhat decurrent at the base, down to the middle incised at the apex, dark green, velvety shiny. The main rachis bears ten to twelve primary veins on each side. The

lobes are elongate triangular, angustate, 3–5 broad at the base, the outer margin slightly toothed at the apex only.

7. *C. (Morenia) Lechleriana*, Wendland, n. sp.*—This species was found in 1854 by Lechler in the damp forests near St. Garan, in Peru. Unfortunately no more is known of it than the leaf and the female inflorescence. It must be a fine plant, as the elongate ovate lamina has a length of about half a metre. It is divided down to the middle. The main rachis bears nineteen to twenty primary veins. The broad lanceolate, acuminate lobes are 8–10 cm. broad at the base. The outer margin is remote, minutely toothed.

8. *C. (Dasystachys) Deckeriana*, Wendland, was described by Wendland as *Stachyophorbe Deckeriana* (Otto and Dietrich, *Allg. Gartenz.*, xx. (1852), p. 364).—It was first found in Guatemala by the late von Warscewicz, who sent seeds of it to Europe in 1849. Afterwards Wendland found it in Northern Costa Rica, in the valley of the Sarapiquí river. The stem is 1–1½ m. high and 15 mm. thick, annulated at distances of 2–4 cm., and bears a crown of 4–5 leaves which are 90–110 cm. long. The sheath has a length of 20–25 cm., the petiole of 10–15 cm. The lamina is 50–70 cm. long, obovate, thin, cuneate at the base, deeply incised at the apex. The main rachis, 20–35 cm. long, bears twenty primary veins on each side. The lobes are broadly lanceolate, 25–35 cm. long, at the base 12–13 cm. broad. The outer margins are coarsely serrate. Sometimes, but rarely, the lamina is pinnate with about eight segments on each side of the rachis, which are small lanceolate, long acuminate and sigmoid, 30–35 cm. long, 15 mm. broad, and with three veins. Whether this species is still in cultivation I cannot say; I have not seen living specimens.

9. *C. (Collinia) stolonifera*, Wendland mss., in Hooker, *Botanical Magazine*, November, 1892, t. 7265.—This species is a native of Mexico, but I cannot give a more exact locality, as I find no notice of the species in Wendland's notes. The striking character of this plant is, as Sir Joseph Hooker says, its excessively stoloniferous habit, resulting in the stems forming dense clusters, amongst the bases of which creep the stolons, some, however, radiating horizontally, and giving rise to young plants at some distance from the old stems. These are slender, hardly a yard high, as thick as the middle finger, growing in dense tufts with interlaced stolons, green, rather closely annulate. The leaves are terminal, 10 inches long, bright green, shortly petioled, obovate in outline, cleft to below the middle into two dimidiate-oblong, subacute, nine-nerved, many-nerved segments; outer margin of the segments crenately toothed, inner slightly curved; petiole 1 to 1½ inch, slender; sheath short, spadices infra foliar.

10. *C. (Nunnezharia) Pavoniana*, Wendland mss., n. sp.†—This species is derived from garden plants which were introduced at different times into European gardens—viz., once by Linden from Peru, under the name *Chamædorea cataractarum*; at another time by Verschaffelt as *Chamædorea Verschaffelti*. It is nearly allied to the latter, from which it differs especially in the shape of the leaves and the number of primary veins. Wendland says in his manuscript that he is very doubtful whether it is the same as the plant

* *Chamædorea (Morenia) Lechleriana*, Wendl., n. sp.—Folii simplicibus apice fere usque ad medium bifidis, 19–20 nerviis, lacinii late lanceolatis; spadiceis ♂ pluribus in eodem annulo simplicibus, longissimis, tenuibus, laxifloris.

† *Chamædorea (Nunnezharia) Pavoniana*, Wendl. mss., n. sp.—Caudicibus prolificis; foliis simplicibus, lamina obovata basi cuneata, ultra dimidium bifida, nervis primariis utrinque 11–12, lacinii divergentibus late-lanceolatis acuminatis; spadiceis pauciramosis.

collected by Ruiz and Pavon, or a new one. Afterwards he was convinced that they are different species, and so I give the following description:—The plant throws up stems which are proliferous at the base, 3–4 m. high, and hardly as thick as the little finger. Each stem bears a crown of five to eight leaves, with short petioles of 1–4 cm. length. The lamina is 40–45 cm. long; the rachis, shorter than in *C. Ruizii*, seldom attains to more than 15 cm., and has only eleven to twelve primary veins on each side. The shape of the lamina is obovate-cuneate at the base; the laciniae, therefore, are much more divergent than those of *C. Ruizii*; they are about 30 cm. long, their inner margin is straight, whilst the outer one is curved at the apex, and near the apex slightly serrate-crenate. Wendland says that dried leaves of this species are bright green, whilst those of *C. Ruizii* are greyish-green when dried. The spadices are the length of those of *C. Ruizii*; the male flowers are vitellineous yellow. The fruit is oblong-roundish; the seeds are roundish-ovate, 9 mm. long, 8 mm. broad.

11. *C. (Nunnezharia) Ruizii*, Wendland mss., n. sp.*—This is the *Nunnezharia fragrans* of Ruiz and Pavon, which is not to be confused with the *Morenia fragrans* of Ruiz and Pavon. As the genera *Morenia* and *Chamædorea* are to be united, Wendland named this species in honour of the collector, who found it in eastern Peru, in the forests near Pozuza, where it is called by the inhabitants "Chucasium." Poeppig gives for this Palm the vernacular name "Sancavilla." The stem is 8–10 mm. thick at the upper part, annulated in distances of 2–3 cm. The whole leaf is 60–70 m. long, of which the cylindrical closed sheath and the petiole measure 15–20 cm. The oblong spatulate lamina is 45–50 cm. long, the rachis 15–20 cm.; the laciniae are porrect, at the base 7 cm. or rather broader and 30 cm. long; their outer margin is slightly crenate, near the apex more crenate. At each side of the rachis there are fifteen to sixteen primary veins. The spadix is about a span long, and divided near the apex into four to ten rami, which bear vitelline yellow flowers. Dr. Udo Dammer, Dahlem, near Berlin.

BOOK NOTICE.

"THE JARDIN DES PLANTES."

M. Louis Denise, one of the Librarians at the National Library in Paris, has published, through M. Daragon, 30, Rue Duperré, Paris, a *Bibliographie historique et biographique du Jardin des Plantes*. It comprises a detailed catalogue of publications and illustrations relating to the Garden from its foundation in 1626 to the year 1895. The "Museum" as it exists now combines a botanical garden, herbarium and museum, with a zoological garden, a natural history museum, and various chemical and physical laboratories. It may therefore readily be conceived that the catalogue appeals to a large and varied class of readers, and, so far as it goes, provides material for a future detailed history of the famous establishment. The author explains in his preface that he has been obliged to eliminate much that would be of interest, and tells us on what principle he selected his material, otherwise we might have wondered at the omission of the names of Tulasne, Weddell, Mirbel, Gaudichaud, Verlot, Carrière, and many other famous botanists and cultivators.

It is not generally known that a Scotchman, Dr. William Davidson, was the first Professor of

* *Chamædorea rigida*, Wendl., "lamina simplici cuneato-obovata apice bifida, rigida; spadiceis fœmineis simpliciater pauciramosis."

† *Chamædorea pumila*, Wendl., "lamina simplici elliptica apice bifida; spadiceis fœmineis simplicibus."

* *Chamædorea (Nunnezharia) Ruizii*, Wendland mss., n. sp.—Caudicibus proliferis; frondibus simplicibus, lamina oblongo-spatulata ultra dimidium bifida, nervis primariis utrinque 15–16, lacinii late lanceolatis, acuminatis, porrectis; spadiceis pauciramosis.

Chemistry, and Director of the Jardin des Plantes (1647-1654). The name is also spelt Davisson, and d'Avinson; and it is reported that Evelyn in 1649 attended his lectures. In 1784 one John Andrews is quoted as saying that "the most pleasant though not the most frequented garden in Paris is Le Jardin du Roi. It is open, airy, and spacious." A few years after this we find that Citizen Jussieu, in 5 Floreal, 5th Year, made his first herborising excursion in the Bois de Boulogne.

In 1870 we are reminded how the elephants were destroyed to supply food to the besieged residents, and in 1871 reports were made to the Botanical Society of France and to the Institute concerning the bombardment of the Museum by the German army in January, 1871.

Criticisms, sometimes bitter ones, have been published, especially regarding the administration of the Garden. M. Lefebvre, in 1821, inveighed against the natural system of De Jussieu, upheld Tournefort and Linnæus, and was, as we are told, "exasperated by the cotyledons!" Charles Martins, in 1868, compared the Jardin des Plantes unfavourably with the Royal Gardens at Kew, and similar opinions were published by Mr. William Robinson in his *Parks, Promenades, and Gardens of Paris*. In reading these criticisms, it is necessary to take into consideration the diverse circumstances, the deficient budget, and the special objects of the establishment. In January, 1893, the stock of fuel for heating the stoves was exhausted, a circumstance which led to a passage-at-arms between M. Max Cornu, the then Professor of Culture, and M. Milne Edwards, the Director. Elsewhere we find reference to the great impulse given by M. Cornu to the cultivation and dispersion of economic plants to the French colonies. The references to the menagerie, the elephants, the giraffes, the monkeys, the hippopotamus, and other animals are also of much interest.

The extracts we have made will suffice to show that this work, though only a catalogue of books, is one which those interested in the subject will not willingly lay aside till they have skimmed its contents from p. 1 to p. 260. A list of authors and a full table of contents render reference easy.

COLONIAL NOTES.

FRUIT-GROWING IN QUEENSLAND.

BANANAS.—There was a much greater area under Bananas in 1903 than in 1902—namely, 6,577 acres against 5,266 acres, an increase of 1,311 acres. There were 47,437 fewer bunches obtained from the greater area, however—namely, 1,112,578 bunches in 1903, and 1,160,015 bunches in the previous year; an average per acre of 169 bunches in 1903, and of 220 bunches in 1902.

Mourilyan is the chief centre of Banana cultivation, having 3,553 acres or 54 per cent. of the total area, and 746,945 bunches, or 67 per cent. of the total production being returned from that district, the average yield in this district being 210 bunches to each acre. Of the additional area in 1903 1,075 acres, or 82 per cent., were planted at Mourilyan. Cairns produced the next largest quantity, but the acreage there was practically the same in both years; from the 1,070 acres under crop there in 1903, 156,977 bunches of Bananas were obtained, an average return to each acre of 147 bunches.

PINEAPPLES.

This fruit, which would appear to be less affected by drought than many plants, showed an increase both in acreage and production in 1903. Pineapples would appear to offer greater possibilities in the way of export than many other varieties of fruit. Packed under ordinary condi-

tions, if care in gathering and casing be taken, the fruits will carry for considerable distances and arrive in good condition. Beyond this, however, the results of experiments would appear to justify the belief that if carried in chilled chambers, under certain conditions, it is not improbable that the fruit may be successfully conveyed to Europe, and thus become another article of commercial export on a large scale. The experiments in this direction are being continued by officers of the Department of Agriculture.

There were 1,493 acres under Pineapples in 1903 against 1,101 acres in the previous year, an increase of 392 acres. The production last year was 340,832 dozen, and in 1902 it was 260,444 dozen, an increase of 80,388 dozen. The average yield per acre each year was 228 dozen and 237 dozen respectively. Brisbane petty session district embraces nearly half the Pineapple cultivation and production of the State; from the 601 acres planted there 155,370 dozen were marketed. There is a large export trade in Pineapples with the southern States.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

SEPTEMBER 20.—*Present*: Dr. M. C. Cooke (in the chair); Messrs. Odell, Nicholson, Worsley, Saunders, and Gordon; Professor Boulger, Revs. W. Wilks and G. Henslow (Hon. Secretary).

Apple and Pear Blossom, Pollination of.—In further reply to Mr. Dunlop's inquiries as to the advice that "no one kind of Apple should be largely planted by itself," Mr. Worsley observed that such dessert Pears as Marie Louise require special conditions of temperature, about 70° F. in a dry air, for effective pollination. But it is not often that such perfect conditions obtain when the trees are in blossom, so that Pears of that variety are often regarded as "bad setters." It has been found that all choicer varieties do very much better when intermingled with commoner ones.

Oats Malformed.—Mr. SAUNDERS reported as follows upon some stunted Oats which were shown by Mr. C. H. Hooper at the meeting of the Scientific Committee on August 23:—"They were attacked by the stem-eelworm (*Tylenchus devastatrix*), causing them to become 'Tulip-rooted' or 'segged.' The best method of exterminating this pest is to burn all the stubble-roots, &c., of the crop, and then to plough the land deeply (16 or 18 inches), so as to bury the eelworms so deeply that they cannot reach the surface again. As this pest is also the cause of the disease in Clover known as 'Clover sickness,' this crop should never immediately follow an infested crop of Oats. This pest is easily carried from one field to another by the soil attached to various implements, horses' feet, and the boots of labourers. The following dressings have been found of use in assisting an infested crop to "grow away" from the pest, though I doubt if they have had much effect on the eelworms:—Sulphate of potash 1 cwt. per acre, 3 cwt. of sulphate of potash and 1 cwt. of sulphate of ammonia, or two parts of sulphate of potash and three parts of sulphate of ammonia, or sulphate of iron 3 cwt. per acre."

Grapes Attacked by Insects.—The following is Mr. SAUNDERS' report on samples sent from Blackheath:—"I have no doubt but that the insects attacking the Grapes are the caterpillars of *Batodes* (*Tortrix*) *angustiorana*; but the *Tortrix* caterpillars are so much alike, and the moths were in such bad condition, that I cannot speak positively. As to destroying the caterpillars, it seems almost impossible to suggest any means which would not spoil the Grapes, as any insecticide would impart a flavour to the fruit. Syringing with cold water might do some good, but it would have to be used with considerable force. I have not been able to find out where the chrysalides are formed. If in the ground, removing, say, 2 in. of the surface-soil would be effectual; if they are formed on the stems or shoots of the Vines, then the latter should be carefully dressed. This would kill the chrysalides, which will be found in a silken web or cocoon. The walls and

woodwork should also be well washed, so as to kill any which may be formed on them."

Iris and Fungi.—In reply to an inquirer as to the cure of the common *Iris* fungus, the Rev. W. WILKS gave his experience of the dusting of the plants with kaint once a fortnight or once in three weeks during autumn and spring. By this means he perfectly cured many badly diseased plants.

Peach Rot.—Dr. COOKE reports as follows upon fruits received from Leeds:—"Undoubtedly the Peaches are suffering from a had attack of *Gloeosporium fructigenum*, which also attacks Apples, Grapes, Figs, and other fruits. It is dangerous in a house, as it may soon extend to other trees, and is very difficult to exterminate, as it is deep-seated. Let all fruits be gathered and destroyed as soon as diseased spots appear. The only remedy we know is spraying with a solution of half-an-ounce of sulphate of potassium to one gallon of water. Application to be made at intervals of ten days."

Apple Canker.—Dr. COOKE exhibited branches of Apple-tree suffering from canker. Surrounding the cankerous spots were tufts of a slightly pinkish mould, which had been identified as the conidia of *Nectria ditissima*. Other, and older, cankers on thicker limbs showed no trace of either the conidia or the perfect *Nectria*, and would otherwise have been difficult to trace to their true cause, especially now that it is believed the *Gloeosporium* also produces canker on Apple branches. With this evidence it would be tolerably clear that all the cankers on this tree were due to the *Fusarium*, which forms the initial stage or conidial form of the *Nectria*.

Lychnis with Grubs.—Mr. SAUNDERS reports as follows upon specimens sent by Mr. Holmes:—"I should say that the small yellow grubs in the seed vessels of *Lychnis diurna* are those of a small two-winged fly, probably belonging to the family *Cecidomyiidae*. It is very difficult to name these little dipterous grubs unless you can rear the flies."

HORTICULTURAL SHOW AT HEREFORD.

SEPTEMBER 7.—Mr. John Wilson's tenth annual horticultural show at Hereford Produce Market was held on the above date under favourable conditions. Mr. Wilson pays all expenses attached to this exhibition, and the money taken at the doors is given to Hereford charitable institutions. The entries were a record, and the arrangements excellent. A feature of the show were the Excelsior Onions, which is Mr. Wilson's speciality.

The admission charged, which was merely nominal, amounted to £10 15s. 4d., and was apportioned as follows: five guineas to Herefordshire General Hospital; three guineas to the Victoria Eye and Ear Hospital; and two guineas to the Hereford Nursing Association.

GARDENERS' DEBATING SOCIETIES.

CROYDON AND DISTRICT HORTICULTURAL.—On Tuesday, September 20, a lecture on "Fruit as a Necessary Food" was delivered by Mr. H. Cannell, V.M.H., Swanley. For the past ten years Mr. Cannell's diet has been strictly vegetarian, and he has felt more active and enjoyed better health than formerly. In fruit, said Mr. Cannell, they had enough nourishment to keep the body in proper working order, and not only this but it created the appetite and provided everything to build up a strong constitution. He also emphasised its economy.

MANCHESTER HORTICULTURAL IMPROVEMENT.

—The members of this Society journeyed to Knutsford on Saturday last by invitation from Messrs. Caldwell & Sons, to inspect their extensive nurseries. They were met at the station by members and representatives of the firm, and were driven in brakes through the ancient town to the nurseries of over 100 acres in extent. They were entertained to tea by Messrs. Caldwell, and returned to Manchester in the evening. The party included Mr. Paul of Manchester Botanic Gardens, Secretary, and several members of the Manchester Seed Trade.

SCHEDULES RECEIVED.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL SOCIETY'S AUTUMN SHOW.—To be held on Nov. 2 and 3 at Streatham Hall, near Streatham Station.

IPSWICH CHRYSANTHEMUM SHOW.—This annual exhibition of Chrysanthemums, fruit, vegetables, and honey, has been arranged to take place at the Public Hall and Saloon, Ipswich, Tuesday and Wednesday, November 8 and 9. Secretary, Mr. Herbert E. Archer, 13, Museum Street, Ipswich.

DEATH OF A GARDENER.—The death is reported of Mr. W. E. BOYCE, aged 47, who for some years has filled the position of Secretary to the Highgate Horticultural Society and the Highgate and District Chrysanthemum Society. It is feared that deceased's death was due to poison. He leaves a widow and several children.

ANSWERS TO CORRESPONDENTS.

**** EDITOR AND PUBLISHER.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BEGONIA: M. C. An abnormal condition often seen in flowers and leaves. See *Gardeners' Chronicle*, November 29, 1902, pp. 395, 398.

BOOKS: Cars. The newest work on the subject is *The Book of the Carnation* (R. P. Brotherton), it may be obtained from our publishing department, price 2s. 9d. post-free.—A. M. C.. *Tomato Culture for Amateurs* (B. C. Ravenscroft) may be obtained from our publishing department, 1s. 1d. post-free.—J. B. We do not know a botanical book in which only hardy herbaceous flowering plants are included, nor a book upon such species that does not include directions for their cultivation.

BUSHEL OF APPLES: H. S. W. The standard bushel contains 2218.192 cubic inches. The market bushel basket is generally 17½ inches in diameter at the top, 10 inches at the bottom, and 10 inches in depth, but they vary in the degree of holding capacity. The weight of a bushel of Apples is approximately from 40 to 50 pounds, more or less according to the degree of solidity of the fruits.

CELERY: X. Y. Z. We cannot offer an opinion unless you send a marked copy of the schedule, and state accurately the names of the varieties you exhibited.

CHRYSANTHEMUMS: A Reader. Visit some of the more important exhibitions and make notes of the foliage you admire most in the classes in which prizes are offered for Chrysanthemums arranged for decorative effect. Many varieties of autumn-tinted foliage from out-of-doors are used, also sprays of *Asparagus plumosus*, *A. Sprengeri*, and other species. Most Ferns are of too delicate appearance to be happily associated with large Chrysanthemum flowers.—W. J. The plants are suffering from an excess of stimulating manures. Use great care in affording water to the plants. If too much or too little be applied at the roots, the injurious effect will be seen in the leaves.

CUCUMBER: J. D. The leaves reached us in such miserable condition that much extra trouble was given. There is no trace of the prevalent disease in leaves or fruit, and no evidence of fungi anywhere. Is there not something in the cultivation afforded the plants that is unsuitable?

CUCUMBER AND MELON ROOTS: Soil. There is nothing in the fragments sent to indicate what is the matter. There is no fungus manifest. The material is quite insufficient to form an accurate opinion upon. Probably a little more potash in the soil would effect a desirable change.

DOUBLE APPLE: Miss R. The example you send is a good specimen of a syncarpous fruit often met with in Apples. It is due to the union of two fruits at a very early stage of growth.

LATE-RIPENING PEACHES: D. Field. The variety Lady Palmerston should have been included amongst the Peaches recommended for ripening

in October. This is one of the best, and superior to Golden Eagle.

LILIUM AURATUM: W. B. Last season was a very bad one for properly maturing the bulbs, and yours may have suffered in consequence. The specimen received, if properly matured this year, should produce some good flowers next season.

MELONS: F. W. S. The specimens are not sufficiently good to enable us to form an opinion.

MINT RUST: A. The Mint is badly infested with rust (*Puccinia Menthae*), and nothing can save the crop. It is not fit for kitchen use. Better cut the plants down to the ground and burn the tops to prevent the disease spreading. Probably the roots are healthy, and with care may produce a sound crop next year. Sprinkle the ground afterwards with Bordeaux-mixture in order to kill all fallen spores. There is hope of success as the winter spores, or teleutospores, are not yet formed.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—W. R. Spencer. 1, Flower of Herts; 2, Cowarne Quoining; 3, Bevan Seedling; 4, Newtown Pippin; 5, Marie Louise; 6, Catillac.—H. Hodge. 1, Cellini Pippin; 2, Welford Park Nonsuch; 3, Cox's Orange Pippin. The Pear was over-ripe.—G. P. 1, Small's Admirable; 2, Golden Noble; 3, Lord Grosvenor; 4, Peasgood's Nonsuch; 5, Mère de Ménage; 6, Lane's Prince Albert.—F. Morris. Maltster.—C. G. S. Round Pear, Gratioli; long one, Beurré Bosc.—F. L. R. 1, Williams' Bon Chrétien; 2, Beurré Bachelier; 3, Souvenir du Congrès; 4, Beurré Hardy; 5, Gansel's Bergamot.—W. Cann. 1, Lord Suffield; 2, Lady Henniker; 3, King of the Pippins; 4, Hawthornden; 5, Manx Codlin.—Constant Reader. Louise Bonne of Jersey.—J. Hawkins. Wellington.—Constant Reader. 1, Gascoigne's Scarlet; 2, White Westling; 3, Ecklinville; 4, Lane's Prince Albert; 5, Hollow-crowned Pippin; 6, Lady Henniker.—Roy. 1, Kentish Deux Ans; 2 and 3, Warner's King; 4, Brockworth Park; 5, Keswick Codlin; 6, Blenheim Orange.—G. F. T. White Westling.—M. F. 1, Beauty of Kent; 2, Alfriston; 3, Dutch Codlin; 4, Striped Beefing; 5, Cellini Pippin; 6, Pile's Russett.—J. Perry. 1, Warner's King; 2, Ribston Pippin, a very fine fruit; 3, Brownlee's Russett; 4, Beurré d'Amanlis; 5, Louise Bonne of Jersey; 6, Beurré Capiaumont.—J. F. 1, Curl Tail; 2, Stirling Castle; 3, Peasgood's Nonsuch; 4, Newton Wonder; 5, Prince Albert; 6, Yorkshire Greening.—J. A. Smith. 1, Glout Morceau; 2, Twenty Ounce; 3, Kerry Pippin; 4, Stirling Castle; 5, Beurré Rance; 6, Doyenné d'Alençon.—D. G. P. Apples: 1, Duchess of Oldenburgh; 2, Worcester Pearmain; 3, Oslin. Pears: 1, Summer Bergamot; 2, Bellissime d'Hiver; 3, Comte de Flandre.—J. C. S. 1, Gravenstein; 2, Yorkshire Beauty; 3, Mank's Codlin; 4, Lord Lennox; 5, Maclean's Favourite; 6, decayed.—W. C. D. 1, Triomphe d'Jodoigne; 2, Cockpit; 3, Lewis's Incomparable.—Acton. Louise Bonne of Jersey.—R. R. 1, Court Pendu Plat; 2, Small's Admirable; 3, Sturmer Pippin; 4, Cox's Pomona; 5, Winter Greening; 6, Winter Red-streak; 7, Peasgood's Nonsuch; 8, Calville Rouge Precocée.—J. S. & Son. 1, White Paradise, or Lady's Finger; 2, not recognised, but the fruits are very juicy and of excellent flavour.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*Hortus*. 1, Iris pseudo-Acorus variegatus; 2, Panicum virgatum; 3, not recognised; 4, Menziesia poli-

folia.—E. B. *Leycesteria formosa*.—J. L. G. 1, Aster acris; 2, Nepeta violacea; 3, Agathaea coelestis; 4, *Spergularia rubra*.—G. E. *Monmouth*. *Aerides multiflorum* var. *Lobbii*, generally called *Aerides Lobbii* in gardens. The section represented in gardens as *A. affine*, *A. roseum*, *A. Godefroyanum*, *A. Veitchii*, and *A. Lobbii*, are now all placed under *A. multiflorum*, although the habits of the plants vary considerably.—F. N. B. 1, *Cattleya luteola*; 2, *Cattleya Eldorado*; 3, *Cattleya Forbesii*.—Z. Y. X. 1, *Begonia discolor*; 2, *Abutilon megapotamicum*; 3, send in flower; 4, *Sidalcea malviflora*; 5, *Polystichum angulare proliferum*; 6, *Montbretia crocosmiflora*.—F. H. *Cypripedium insigne*.—T. T. 1, *Dendrobium chrysanthum*; 2, *Escallonia macrantha sanguinea*.—A. L. 1, *Bougainvillea glabra*; 2, *Strobilanthes Dyerianus*; *Acalypha musaica*; 4, *Dracæna Godseffiana*; 5, *Acalypha hispida*; 6, *Dendrobium longicornu*.—J. F. 1, *Solanum macranthum* (*Botanical Magazine*, t. 4138); 2, *Momordica Balsamina*; 3, *Datura meteloides*.—H. M. Why not number the specimens? Spike of purple berries, *Phytolacca decandra*; wing-fruited tree, *Eunymus europæus*; purple leaf, *Prunus Pissardii*; purple flower, *Agrostemma coronaria*; scented-leaved plant, *Monarda didyma*.—W. T. 1, *Aster ericoides*; 2, *Aster Amellus*; 3, *Pyrethrum uliginosum*.—North Devon. *Berberis vulgaris*.—A. H. *Prunus pendula*.

NEW CUCUMBER: W. E. R. You had better show fruits at the meeting of the Royal Horticultural Society in the new Hall at Vincent Square, on Tuesday next, October 4, in order to obtain the opinion of the Fruit and Vegetable Committee upon the merits of the variety. Address, Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster.

POTATOS FOR EXHIBITION: R. S. L. We know of nothing beyond the work of cleansing the skins that is necessary in the preparation of tubers for exhibition. They should be selected as nearly of one size as is possible, choosing those tubers having clear, unblemished skins. In regard to the application of a "preparation" with a view to imparting a "waxy" appearance, we should suppose that if this came to the knowledge of the judges it would be quite sufficient to induce them to disqualify the exhibit.

SHAMROCK: H. J. P. What species of plant should be regarded as the true Shamrock is a much disputed matter. Three plants are frequently put forward as being the Shamrock, but which is correct there is not sufficient evidence to determine. The three species are *Trifolium repens*, *T. pratense*, and *Oxalis Acetosella*. See an exhaustive article on the subject in the *Gard. Chron.* for April 7, 1900, p. 222.

TECOMA CAPENSIS: G. J. Thin out the growths with a knife, only allowing sufficient shoots to remain that will be required to furnish the trellis properly. You do not indicate the situation of the plants. If this is unfavourable it would account for their not flowering freely.

TRANSPARENT PAPER FOR ROOFING: Bids. Apply to Mr. C. A. Christiansen, Norwood Green, Southall.

WALNUT-TREES: C. J. The crevices you describe as existing between the lead and the bark might be filled with cement, and when this has become dry, apply a coating of tar over the lead and the cement. By such means you will be able to exclude water entirely. But the limbs of the tree should be made secure by means of chains also, in order that they may not be blown about by high winds.

COMMUNICATIONS RECEIVED.—A. G. R.—A. R.—J. J.—T. B.—W. H. B.—T. B. A.—W. J. W., Ltd.—A. T.—J. C.—A. Jax.—A. W. C.—C. B.—J. H. C.—A. B.—E. T. C.—F. & S.—F. L.—Mrs. G. K.—G. M. G.—C. I.—B. R. (next week)—Cardiff Gardeners' Association—G. H. H.—Urgent—Thos. S. Ware, Ltd.—Sutton & Sons—C. Maron—G. B. M.—S. W. Newcomb—C. S. Naples—R. L. C.—Y. Sch. F. L.—W. Miller—W. A. C.—T. H.—A. W. W.—W. S. Mersina, Turkey in Asia—A. H.—H. M.—S. C.—Quintin Read—R. D.—H. W.—Dr. M.—National Dahlia Society—M. B.—Holland—A. L.—J. Snell—E. K. L.—A. C. B. (with thanks)—W. T.

PHOTOGRAPHS RECEIVED AND UNDER CONSIDERATION.—T. Down—J. B.—S. C.—J. D., Highbury.

(For Markets and Weather, see p. x.)



MECONOPSIS INTEGRIFOLIA, A HARDY SPECIES INTRODUCED FROM THIBET, WHICH HAS RECENTLY FLOWERED IN ENGLAND FOR THE FIRST TIME; COLOUR OF FLOWERS, CLEAR, BRIGHT YELLOW.

[See letter in our present issue from Messrs. Jas. Veitch & Sons' Collector.





THE Gardeners' Chronicle

No. 928.—SATURDAY, Oct. 8, 1904.

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BITTER-ROT OF APPLES (GLEOSPORIUM FRUCTIGENUM).

THE "Bitter-rot" or "Ripe-rot" of Apples, sometimes called "Anthracnose," is a disease well known wherever the Apple is cultivated, and the fungus which produces it has probably been known since 1854. In this year the late Rev. M. J. Berkeley described what he termed *Septoria rufomaculans*,* which occurred on Grapes; this name he afterwards changed to *Ascochyta rufomaculans*,† and in 1879 it was again changed by Thümen‡ to *Gloeosporium rufomaculans*. It was said to "form orbicular spots of a sienna-brown, preserving constantly a definite outline. This spot separates readily from the subjacent pulp, in consequence of a copious crop of mycelium, the threads of which form the radii of a circle. The surface is rough, with little raised, orbicular, reddish perithecia (?) arranged concentrically, spores varying from .02 to .15 mm. In age the perithecia fall away, leaving a little aperture, the border of

which is often stained black." This description, as hereafter will be seen, would suit equally well as a diagnosis of *Gloeosporium fructigenum*. The application of the term "perithecia" was commonly made in those days to receptacles such as those of *Gloeosporium*, in which no true perithecium is present. Certainly the host was different, but of that hereafter.

In 1856 Berkeley described the fungus which he called *Gloeosporium fructigenum**

1887, added the Pear and Apricot to the list of hosts. Halsted, in 1892, proved by his experiments that the same fungus caused the "Ripe-rot" of the Apple, Grape, Peach, Pear, Tomato, &c., which results were confirmed by Chester in 1893. Hence it appears that the fungus can adapt itself to numerous hosts. Probably it will attack indiscriminately all pomaceous fruits.

We are greatly indebted in this summary to an excellent history, "The Bitter-rot of

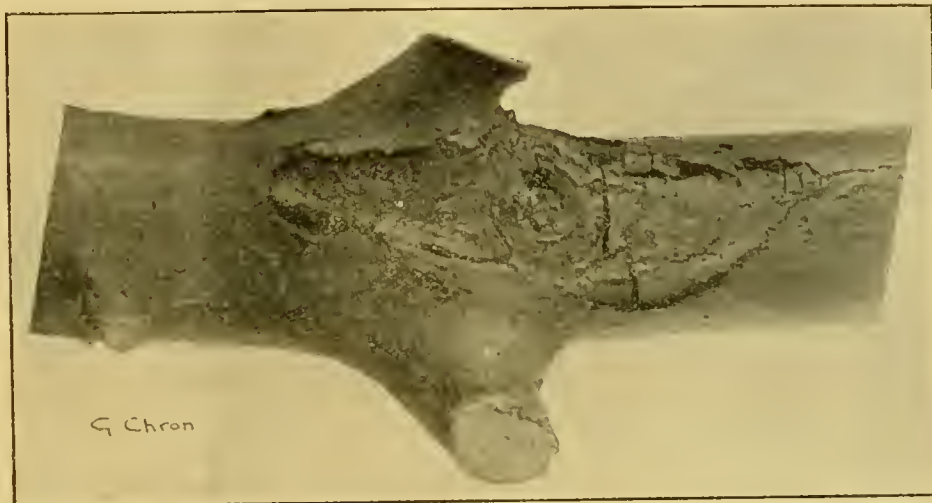


FIG. 101.—BITTER-ROT CANKER FROM LIVING APPLE TREE.

as occurring on Apples, "studding the fruit with pearl-like specks, bursting through the cuticle, and swelling above it in the form of little flat cushions, sometimes simple, more frequently surrounded by a more or less perfect ring. Each plant consists of a branched inosculating mycelium, giving rise

Apples," by Hermann von Schrenk and Perley Spaulding, published by the United States of America Department of Agriculture in 1903. In fact, had that memoir been generally obtainable in this country, the present notice would have been unnecessary.

It was in 1859 that Berkeley described another fungus belonging to the same genus which produced a kind of Ripe-rot on Peaches and Nectarines, and this he called *Gleo-*



FIG. 102.—APPLE AFFECTED WITH BITTER-ROT.
(INOCULATION FROM A CANKER.)

to simple or forked subfastigiate irregular threads, each tip surmounted by an oblong, curved or irregular spore (25 μ long). Afterwards the cuticle is raised in little shining transparent pustules, and a tendril of minute spores, precisely like the previous ones, issues from them.*

Galloway, in 1890, demonstrated that the Ripe-rot fungus of the Grape, when transferred to the Apple, caused the Bitter-rot of the Apple, and *vice versa*. In 1891 Miss Southworth confirmed these results. Thümen, in

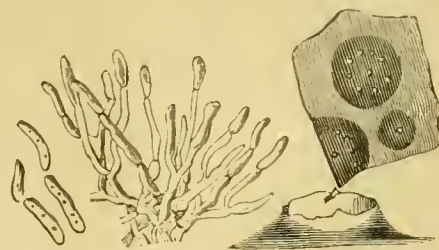


FIG. 103.—GLEOSPORIUM FRUCTIGENUM (BERK.).

sporium laticolor.* This again, there is every reason to believe, is the same fungus as the foregoing, developed upon different fruits. "At first appearing as dark specks with a bleached centre, at length the white spot and dark ring become more clearly defined, seated in the centre of a regular circular depression, the borders of which are pale, the whole surface of the depression studded with little salmon-coloured warts, disposed more or less in circles, from which issue little curled tendrils of salmon-coloured spores, oblong (16–17 μ long) with their contents retracted to either end." Although evidently at the time regarding this as a distinct species, Berkeley alludes to "a plant of the same genus, destructive

* *Gardeners' Chronicle*, 1851, p. 676, with figure.

† *Berk. Outl.*, p. 320.

‡ *Fungi Pomicoli*, p. 59.

* *Gardeners' Chronicle*, 1856, p. 245, with figure.

† *Cooke Handbook*, fig. 185.

* *Gardeners' Chronicle*, 1859, p. 604.

to Apples"; and he adds, "We may also refer to the very similar production on Grapes."

Later on, in 1874, Berkeley and Curtis described another Anthracnose on Apples, found in South Carolina, to which was applied the name of *Gloeosporium versicolor**—"Forming patches an inch or more wide; pustules reticulated, spores oblong or slightly clavate, greyish (.01 to .02 mm. long), very different in habit from *G. fructigenum*, which also occurs on Apples."

We are therefore prepared to submit that the various names of *Septoria rufomaculans*, Berkeley; *Ascochyta rufomaculans*, Berk.; *Gloeosporium rufomaculans*, Thümen; *Gloeosporium fructigenum*, Berk.; *Gloeosporium laticolor*, Berk.; and *Gloeosporium versicolor*, B & C., all represent the same fungus, which we are content to call *Gloeosporium fructigenum*, Berk., and which occurs as causing "Bitter-rot" or "Ripe-rot" on Grapes, Apples, Pears, Peaches, Nectarines, and other fruits.

Evidently this fungus, and the disease it produces, is known generally throughout Europe, in very many of the United States of North America, in Australia, and Tasmania the time of its appearance depending on the approach of the fruit to maturity.

In the Apple the first signs of the approach of the disease is a faint light brown discolouration under the skin. The spots rapidly increase in size, become circular in outline, and gradually of a darker brown, soon sunken and concave, with a sharply defined border. When about half an inch in diameter, small blackish dots appear in the sunken area, which soon enlarge and project as small raised points. Later on they are perforated, and the spores or conidia escape and form sticky pink masses, which dry in cakes and adhere to the epidermis unless washed away by the rain. Sometimes the spores are discharged in long tendrils from the orifices of the pustules. The pustules themselves are often arranged in the form of a ring. As these become exhausted and the rot progresses, other rings of pustules are developed concentrically outside the original ring, and this process continues during the growth and vigour of the disease, so that hundreds of pustules may be produced consecutively upon the same spot. Cold weather seems to check the development of pustules. Alternation of low and higher temperature may account for the intermittent formation of rings. The brown colouration indicates the decay of the fruit, which proceeds laterally towards the core. It may generally be said that hot muggy weather is most favourable to the rapid development of the "rot."

After infection of the fruit, the fungus hyphæ grow in all directions from the original point of infection. The spore-forming stage is indicated by the appearance of the small raised points scattered over the brown spots. These points are caused by masses of parallel hyphæ which grow outward and form a low cone, the apex of which at length ruptures the epidermis and forms a pustule. The spores or conidia are formed by abstriction from the ends of the hyphæ composing the cone. Many conidia may be abstricted in succession from each hypha. Their general form is oblong or cylindrical, sometimes slightly curved, and very variable in dimensions, with an average

of 12 to 16 μ by 4 to 6 μ , and often more. Normally they are one-celled until they germinate. A septum may form during germination; conidia will germinate in water within three or four hours. Just before germination a septum is formed at or near the middle, forming a two-celled spore. One, two, or three germ-tubes may be formed, which are very rapid in growth, and may attain to three or four times the length of the spore in three-quarters of an hour.

It had been long observed that the disease often made its appearance in a cone-shaped

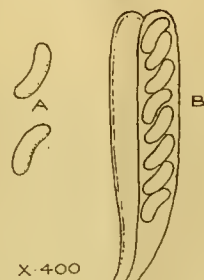


FIG. 104.—
A.—Ascus and Sporidia.
B.—Sporidia.
(Magnified 400 times.)

area, with its apex towards the top of the tree. Following up this observation it seemed to be suggested that first infection proceeded from the apex of the cone, and extended downwards, and spread outwards. In 1902, Mr. R. H. Simpson followed up this seeming suggestion and found blackened depressions on one or more branches near the apex of the cone of infected fruit. These blackened areas on Apple limbs have the appearance of



FIG. 105.—SEPTORIA RUFO-MACULANS ON GRAPE, NOW CONSIDERED TO BE THE SAME AS GLOEOSPORIUM FRUCTIGENUM.

"canker," and have been so called. They were located in 95 per cent. of the cases by following the cone of infected fruit to the apex.

"Canker," as found on Apple-trees in Illinois,* appeared as blackened depressions on limbs of various sizes, from last year's fruit-spurs to limbs 3 or 4 inches in diameter. On these branches rounded or oblong black sunken spots occur from one to several inches long, with more or less ragged edges. The entire bark is killed for a considerable distance back, and the dead bark appears cracked and fissured, or broken away. Around the dead areas a callous layer usually forms, the appearance of which makes the cankered spots look sunken.

Cross-sections of cankers frequently show that at its very centre the wood has been dead for two years. The wood immediately below a cankered spot is discoloured for a considerable distance towards the centre.

Numerous fungous hyphæ are found in the medullary ray cells and the larger vessels, but it is impossible to say whether they belong to the Bitter-rot fungus. Instances were common where two or more Apples hung just below a canker; these were generally badly diseased, while all other Apples in their immediate vicinity were perfectly healthy. Examination of the cankers showed the presence of unicellular spores resembling those of the *Gloeosporium*. After a few days these spores were used for inoculating healthy Apples, and produced unmistakable signs of Bitter-rot. In fact, experiments repeated for several months left little doubt that the cankers on Apple limbs contained spores of the Bitter-rot fungus. To determine whether the *Gloeosporium* could form cankers, a number of trees were inoculated in a manner detailed, with the result that after several weeks cankers were gradually formed, and it was shown beyond question that the Bitter-rot fungus actually produces the canker on Apple limbs. Canker has been found in Britain on Apple branches, which has been attributed to the possible action of *Nectria ditissima*, although no direct evidence of that fungus could be found. The inference now to be drawn is that they were more probably the results of the *Gloeosporium*, or, at least, in some instances.

Another discovery in connection with these cankers was made in December, 1902, when Mr. Spaulding found perithecia, with asci and ascospores, in one of the cankers on Apple limbs. These are assumed to represent the final or ascigerous stage of the Bitter-rot, and for this perfected condition the name of *Glomerella rufomaculans* (Spaulding) has been proposed. This is a new sphaeriaceous genus allied to *Gnomoniopsis*, the ascospores being almost indistinguishable from those of the *Gloeosporium* (12–22 \times 3½–5 μ).

The summary of the evidence shows (1) that conidial spores of the fungus which will produce the Bitter-rot in Apples occur with great regularity in the cankers; (2) that such conidial spores taken from diseased Apples, when inoculated into the living bark of growing Apple-tree branches, will produce Apple cankers resembling those found in orchards; (3) that conidial spores and asci and ascospores are contained in such artificially-produced cankers, which, when inoculated into Apples, produce the Bitter-rot.*

The damage caused by Bitter-rot in America is very great. In 1900 it was estimated that the loss in four counties of Illinois was 1,500,000 dollars. The President of the National Apple Shippers' Association estimated the damage to the Apple crop in the United States in 1900 from Bitter-rot alone to be 10,000,000 dollars.

A summary of the conclusions and recommendations of the Spaulding memoir sets forth that this fungus until 1902 was known only in its conidial stage on pomaceous fruits and Grapes. The perfect or ascigerous stage has since been discovered both in cultures on fruits and in artificial cankers on Apple-limbs.

The fungus is most virulent during moist, hot summers, attacking ripening Apples in July and August.

Cankers have been discovered on Apple-limbs, from which the disease seemed to

* *Grevillea*, vol. iii., p. 13, No. 503.

* Schrenk and Spaulding, "Bitter-rot of Apples," U.S.A. Depart. Agri., 1903, Bull. No. 41.

* Schrenk and Spaulding, *ib.*, p. 36.

spread. These occurred on the upper parts of the trees, and contained spores of the Bitter-rot fungus.

Inoculations into healthy Apple-limbs of Bitter-rot spores resulted in the formation of cankers similar to those found in orchards. Spores from these cankers produced the Bitter-rot in sound fruits.

The spores of the fungus are washed from the cankers on to the Apples below the cankers.

"One of the best methods for combating the disease will consist, during the winter, in carefully cutting out all cankers which should be burned at once. All diseased Apples on the ground or on the tree should be collected and destroyed. As a further precaution, trees should be sprayed with standard Bordeaux-mixture at least once before the buds open, and again frequently from midsummer until the fruits are almost ripe."

The following are a few of the references which may be useful to students:—*Journ. R. H. S.*, xxviii., 1903, p. 8, pl. x., fig. 4; Massee, *Plant Diseases*, 281, fig. 75; *Gardeners' Chronicle*, 1856, p. 245; Tubeuf, *Dis.*, 482; *U. S. A. Depart. Agri. Bull.*, 44, 1903, with plates. The last-named contains 180 references to the literature of the subject. *M. C. C.*

KEW NOTES.

LINDENBERGIA GRANDIFLORA, *Bentham* (see fig. in *Gardeners' Chronicle*, September 20, 1902, p. 213).—This fine Himalayan species is now making a good show in the Cape-house (No. 7). It is a first-rate winter-flowering greenhouse plant, which is much less known than it ought to be. The batch of plants now in flower were grown from cuttings rooted in the spring. At the present time they are bushy plants 3 feet high, and will reach an height of 4 feet before the flowering period has passed. The rather slender growths are of a soft-wooded nature, and the leaves are 2 to 3 inches in length. The somewhat *Mimulus*-like flowers are rather large in size and of bright yellow colour, a single flower being produced on a short pedicel in the axil of each leaf. Cuttings should be rooted over moderate bottom heat in the month of April, potting them off subsequently into 3-inch pots, again into 5-inch pots, and finally into 7-inch pots, in which they will make large bushy plants if the shoots be "stopped" frequently. In the month of June the plants may be placed in a cool frame and treated similarly to *Bouvardias*. By the beginning of September they will commence to flower, and should be then placed in a cool greenhouse, where they will continue to grow and flower throughout the winter.

RUELLIA AMENA, *Nees*.

This is a very elegant, free-flowering *Acanthad*, now producing a profusion of flowers in the T-range. It is difficult to understand why members of this genus are not more commonly grown for decorative purposes, for the majority are easy to grow, generally free-flowered, and often brilliant in colour. *R. amena* is a summer-flowering species. Cuttings should be rooted in March, and the plants grown-on in an intermediate temperature; they should be nice bushy plants in 6-inch pots by the middle of July. The plants usually grow about 18 inches high. The group of plants under notice have been in flower since that month. The panicle is about 7 inches long, and bears numerous bright red flowers slightly less than an inch in length, tubular, and inflated. The flowers last a considerable time in a warm greenhouse. The species is a native of South America. *W. H.*

GRAPE "CORNICHON BLANC."

THIS Grape, by no means a new variety, is seldom seen in gardens, although it is a handsome fruit, and hangs very late in the season. It is known as the "Finger Grape" from the peculiar

sends us the following note:—"Cornichon Blanc is very prolific, producing bunches with long sweet berries which hang for a long time on the Vine. Cornichon Violet has more flavour, is later, and likely to keep even longer on the rods. Both varieties are grown in a



FIG. 106.—GRAPE "CORNICHON BLANC," AS CULTIVATED BY DR. BONAVIA.

form of the berries, which are often an inch and a half in length, and covered with a white bloom. The variety Cornichon Violet is even more handsome, and has a more pronounced flavour than the white variety. The flesh is firm and sweet. For our illustration (fig. 106) we are indebted to Dr. Bonavia, Worthing, who

3-span house, facing south, suitably heated in winter. The Vines are trained on the north side of the house, occupying the narrow portion of the roof. The front or south side of the house is occupied by other plants. The Vines have done well, and they receive plenty of light from the unshaded south side. If an illustration be given

of Cornichon Blanc, it might induce growers to cultivate the variety for its own qualities, and with a view of hybridising other varieties. During the winter months I shall be able to spare cuttings of both varieties, as well as of the fine seedless Sultanieh, should any of your readers care to have them."

Although the Finger Grape is not to be recommended for general purposes, it forms a pleasing novelty, and would be appreciated for its decorative appearance on the dessert-table. Dr. Hogg, in the *Fruit Manual*, who aptly describes the berries as resembling large Barberries, says the Grape is late ripening and late hanging, "of little value, and requires stove-heat to ripen it"!

[We have lately seen this Grape in the Belgian and French markets. Its decorative value is great. Ep.]

TWO NEW CRABS.

At a meeting of the Royal Horticultural Society on September 20, the Fruit and Vegetable Committee recommended Awards of Merit to two new varieties of ornamental Crabs. One of these, "Frettingham's Victoria," is shown in fig. 107. Fruits were exhibited at that meeting by Mr. W. H. Frettingham, Beeston Nurseries, Nottinghamshire. The shape of these fruits may be seen on reference to the illustration (fig. 107), and it only remains for us to add that in colour they were very bright red, which spread over the whole surface, make them exceedingly decorative.

The second variety was shown by Messrs. Jas. Veitch & Sons, and was named "Veitch's Scarlet" (fig. 108). The variety was obtained from a cross between Red Siberian and Apple King of the Pippins. The fruits were deeper and more globular in shape than those of "Frettingham's Victoria," and in colour varied from bright red to deep crimson. The skin of both varieties contained a few small spots, as shown in the illustrations.

NEW OR NOTEWORTHY PLANTS.

LOBELIA HETERODONTA, Sprague, sp. nov.*

This new Lobelia is a strange-looking plant, and has more of scientific than horticultural interest. It was received at Kew last October from the Grenada Botanic Garden under the name of *Lobelia cirsiifolia*, a nearly allied species, from which the serrate sepals and the toothing of the leaves serve to distinguish it. It is an erect plant, rather more than 3 feet in height, with a long raceme of green flowers, several inches distant from the uppermost leaves. The latter are very characteristic, being shortly and regularly serrate above, and furnished with long, rather distant, spreading teeth below. In the Kew herbarium there is a dried specimen of

* *Lobelia heterodonta*, Sprague, sp. n. (§Tylomium). —Ex affinitate *L. cirsiifoliae* et *L. infestae*, a quibus calycis lobis triangulari-lanceolatis solemniter serratis folisque majorem per partem breviter serratis basin versus patente dentatis recedit. Caulis erectus simplex, 3—3½-pedalis carnosus glaber. Folia subsessilia lanceolata, apice acuminata nervo medio in setam excurrente, basi angustata longa decurrentia, 5—9 poll. longa, 8—20 lin. lata, utrinque glabra, denticulis vix ½ lin. longis serrata, basin versus dentibus patentibus distantibus pluries majoribus. Racemus 1½—1½-pedalis, 3½—7 poll. pedunculatus, leviter patenterque pubescens. Bractee lanceolatae serratae foliis subsimiles, pedicellis per 2 lin. adnatae usque breviores, infimae majores 1½ poll. longae. Pedicelli 1 poll. longi pubescentes supra medium bibracteolati, bracteolis 2½ lin. longis, post anthesin apice sursum curvati. Calycis tubus obconico-semiglobosus, apice 4—4½ lin. diametro, lobis triangulari-lanceolatis solemniter serratis, 4—4½ lin. longis, basi 1½ lin. latis, glabris, anthesin ante adscendentibus, demum reflexis. Corolla pallide viridis, supra falcata, lobis longioribus 1½ poll. brevioribus 1 poll. longis. Androecium 1 poll. longum, filamentis glabris, antheris omnibus inferioribus longioribus, barbatis, inferioribus 2 lin., superioribus 3 lin. longis. Stigmata semilenticularia.



FIG. 107.—NEW ORNAMENTAL CRAB, "FRETTINGHAM'S VICTORIA."



FIG. 108.—NEW ORNAMENTAL CRAB, "VEITCH'S SCARLET."

Lobelia heterodonta, collected by Sherring in Grenada during 1890—91, so that there is no doubt that it is really a native of that island. Its nearest allies are the *Lobelia cirsiifolia* already mentioned, which is figured in *Botanical Magazine*, t. 2137, *L. infesta* and *L. digitalifolia*, while *L. ensifolia* greatly resembles it in habit, but differs in having only two instead of all five anthers bearded at the top. All these species have greenish or yellowish-white flowers, and, *L. ensifolia* excepted, form a very natural group.

that nearly half of the number of flowering plants indigenous in the West Indies occur nowhere else, and that more than half of the endemic species occur in one island only. Unfortunately, the statistics given by Grisebach are now quite out of date, as may be seen by comparing his *Verbreitung der Pflanzen Westindiens* with the volumes of *Symbolæ Antillanæ*, edited by Professor Urban, of Berlin. For instance, Grisebach gives only one species as peculiar to Guadaloupe, but there is now a considerable number of plants known to be endemic in that island.

A NEW CULINARY APPLE.

THE variety illustrated at fig. 109 was shown by Messrs. Jas. Veitch & Sons at a meeting of the Royal Horticultural Society held on September 20. It was obtained from a cross between the varieties Peasgood's Nonsuch and Ribston Pibston, and is named "Rev. W. Wilks." The fruits most resemble those of Peasgood's Nonsuch, there being little or no likeness to those of Ribston Pippin. They have pale, greenish-yellow-coloured skins, marked sparsely with minute red



FIG. 109.—NEW CULINARY APPLE, "REV. W. WILKS."

The geographical distribution of the members of this group is rather interesting; each is endemic in one only of the West Indian Islands. *L. digitalifolia* comes from Dominica, which is one of the richest of the Lesser Antilles in endemic species, according to Grisebach; *L. infesta* is a native of St. Kitts, and *L. cirsiifolia* of St. Vincent. In Grisebach's *Flora of the British West Indies* he also quotes *L. infesta* from Grenada, and *L. cirsiifolia* from St. Kitts; but we have seen no specimens confirming this distribution, and believe the statement to be incorrect for reasons which it would take too long to detail here. In this connection it is interesting to note

The further study of the West Indian flora will undoubtedly explain many of the anomalies of plant distribution in tropical America, and it is therefore to be hoped that the theoretical portion of Urban's work will not be long delayed. Cuba in particular is very rich in ancient types, whose nearest allies are to be found, not in the other West Indian islands, but on the mainland of South America. Such is *Tabebuia lepidota* (D.C.), a curious Bignoniaceae, very closely related to *Tabebuia nodosa*, Griseb., which is a native of Paraguay and the Argentine Republic. This singular distribution is still to be explained. T. A. S.

and brown spots. The stem is less than an inch long, very thick, and is inserted in an uncommonly deep and furrowed cavity. The eye is closed, has long segments, and is inserted in a deep cavity slightly channelled in four or five places. The variety is in the best condition for consumption during the months of September and October.

In regard to its cropping qualities, a correspondent writes as follows:—"I saw the seedling tree at Langley quite recently. It was a tall standard, six years old, and of very robust growth, quite excelling in this characteristic the bulk of other seedling trees by it. I should

regard it, judging by the seedling, that the variety had the robust habit of Blenheim Pippin or Bramley's Seedling. The tree on its first year of fruiting produced thirty fruits."

GRAPES AT MELTON CONSTABLE.

WHEREVER Grapes are grown largely, and especially among those who are exhibitors of this fruit, the name of Mr. Shingler is a household word. At the Shrewsbury show in August he again secured the coveted trophy for twelve bunches in six varieties. The show in question was so well reported in the pages of the *Gardeners' Chronicle* that I am not going to weary readers with a repetition of facts. I would say, however, having visited his vineries in September, that it is evident that Mr. Shingler is a staunch believer in the extension principle of training. The six vineries at Melton Constable are span-roofed, 100 feet long, 20 feet wide, and 10 feet high in the ridge.

In the principal vineries but six Vines are planted in each house, three on either side; and so rapid has been their progress that the roof is now completely furnished after ten years' growth. This will be considered by many to be "express Grape culture." I think it is no exaggeration to say that the berries of Gros Maroc staged by Mr. Shingler at Shrewsbury have never been excelled either in size or finish. It may come as a surprise to some to learn that the Vine from which that bunch was cut carried no fewer than eighty-four bunches, the Vine itself covering 13 yards of the roof space on one side of the house. The bunches of Madresfield Court were produced from a Vine four years old. Muscat of Alexandria was from a younger cane. One Vine of Gros Colmar was carrying sixty bunches, some weighing as much as 8 lb., while the smallest would not weigh less than 3 lb. From a Vine of Alnwick Seedling as many as fifty bunches were hanging. In a similar manner Alicante was bearing large clusters, many weighing 7 lb. The variety Lady Hastings, which so many persons fail to grow even tolerably well, had produced forty handsome bunches. This is quite one of the finest flavoured Grapes in cultivation when managed properly. It is a sport from Muscat Hamburg, possessing the flavour of that variety, and the appearance of Madresfield Court.

"Lady Hastings" does not require nearly such a long season to ripen as do some varieties. Started at the end of February along with Muscat of Alexandria the fruits ripen early in July, or quite a fortnight before the Alexandrian variety. But some gardeners are not able to induce this Grape to make satisfactory growth, much less produce fruit. A plant of Lady Hastings was inarched on a weakly plant of Black Hamburg in April of this year, and at the time of my visit had made a growth of 25 feet. Thorough maturity of the wood is an absolute essential to success. To obtain this the roots must be kept under thorough control, and if in an inside border so much the better. The seedling Melton Constable, raised by Mr. Shingler by crossing Gros Colmar with Lady Hastings, is an improvement upon Gros Colmar in the fact that it colours so much better, crops quite as freely, and will keep equally long. To judge from a bunch of fruits when cut is fallacious: see the two growing side by side, and no one would fail to see which variety is the better to grow. It is a well-known fact that Gros Colmar does not everywhere "colour" easily, and in this variety we have a substitute for Gros Colmar.

Mr. Shingler has of late paid more attention to that superb Grape Black Hamburg, as evidenced by the bunch he staged at Shrewsbury. That bunch was one of two cut from a Vine which had been planted but one year. Mr. Shingler holds

strong opinions in relation to the colouring of this Grape; he prefers to have the bunches at least 6 feet from the glass, so that they can acquire the necessary "bloom" away from the strong sunlight. Coupled with the best of foliage, this position will enable the berries to "colour" in the manner we all admire but seldom see. Attention is now being paid to that deliciously-flavoured Grape Muscat Hamburg, which is not a success in the hands of all growers. A cane of Black Hamburg was planted in a confined space in the border in April of this year; upon it was inarched a neighbouring rod of Muscat Hamburg. This has made no fewer than 35 feet of growth beyond the union. The circumference of this shoot is 4 inches! Some persons would consider this an excessive and non-desirable growth, but Mr. Shingler simply assumed that quiet smile of his (so well known to his friends) when this point was mentioned to him. Upon Vines two years planted could be seen the prospective results to follow by the few bunches hanging. The variety Mrs. Pince, too, is receiving attention, one Vine planted last year had made splendid growth, and a bunch with remarkable berries, coloured as we seldom see this Grape.

In the case of Muscat of Alexandria, some Vines in pots which had their roots through the bottom into the soil of an old Cucumber-bed showed how variable are the bunches and berries of this Grape. In some instances the berries were larger, longer, and slightly different in colour, some having the amber tint more developed, so that they might easily have been taken for the Bowood variety; but unfortunately for those who argue about the distinctness of this Grape, two styles of berry and bunch could be cut from one Vine!

"Canon Hall" Muscat, growing in a pot, was exceedingly fine in berry and colour, but with the characteristic irregularity in size.

The variety Lady Hutt, with its small round berries, almost transparent in colour, and pale-coloured foliage, was distinctly a failure in point of quality. White Tokay, three years planted, and trained on the restriction method, had several bunches weighing from 5 to 6 lb. each, and good in berry; but the less said about the flavour the better. Diamond Jubilee was exceedingly well coloured, and had full-sized berries; but the flavour was not agreeable. Of "Mrs. Pearson," a small plant was carrying bunches quite 5 lb. each of that dull colour so characteristic of the variety. A cane of Foster's Seedling, planted three years since in the ordinary soil, carried ten full-sized, shapely bunches of good colour.

A new seedling raised by Mr. Shingler from a cross between the varieties Lady Hastings and Gros Colmar displayed some peculiarities in colour. Imagine a white-coloured Grape with a deep tinge of pink at one end! Whether it will alter after another season's growth remains to be seen. In point of flavour there is a distinctness which lacks definition at present.

Much of the success gained by Mr. Shingler is due to good vineries in the first place, and to close personal observation and strict attention to details; there is no putting off until to-morrow what should be done to-day. Ample foliage, with abundant space to develop it fully, are essentials to success. A space not less than 4 feet is allowed between the rods. In this way each main leaf has a chance to mature fully. It has been said that Vines treated on the extension principle, and carrying so many bunches as these, cannot withstand the strain beyond a very few years. These Vines exhibit no sign of diminution of vigour in foliage, bunch, berry or colour. It is necessary to have a well-drained and consequently a warm border for the roots, which should be under thorough control. *E. Molyneux.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

The Planting Season.—Those intending to purchase and plant fruit-trees extensively, should prepare a list of the varieties they will need, and forward it to the nurseryman so that the trees may be supplied as soon as it is safe to lift them. Although the planting of fruit-trees may be done successfully at any time until the month of March, November is probably the best month in which to get the work done. Select useful varieties that will maintain a long supply for the different purposes.

Varieties to Plant.—Of Peaches and Nectarines I have found the following varieties to be excellent. Almost all the best-flavoured varieties ripen their fruits about the same time, so that if a long supply has to be maintained, the list should be prepared accordingly. Waterloo, Hale's Early, River's Early York, Goshawk, Marquis of Downshire, Violette Hative, Stirling Castle, Dymond, Bellegarde, Barrington, Sea Eagle, and Nectarine Peach. Of Nectarines, Lord Napier, Elruge, Humboldt, and Pine-apple. *Cherries*, Early Rivers, Black Tartarian, May Duke, Kentish Bigarreau Napoléon, Elton Heart, and Waterloo Heart. The weather has been exactly suited to the ripening of the wood of fruit-trees, and growth has not been very strong owing to the heavy crops most of the trees have borne, therefore the roots of wall-trees especially should be given a good soaking of manure-water as soon as the fruits have been gathered, and a few heavy syringings overhead with clear water will be beneficial.

Orchards.—If the land is not covered with grass the present is a good time to get the weeds destroyed. Where grass is growing under the trees, the grass should be kept short. It is good practice to turn the sheep amongst the trees at intervals throughout the summer; and if they be fed with a little cake, the manure of the animals will strengthen the trees. Old trees growing on shallow land should be provided with the drainings from the farm, or other sewage, if diluted sufficiently, may be carted on to the land and distributed between the trees. There need be no waste of liquid manure, as Orchard trees will be benefitted by applications of this, and heavy mulchings of manure from the stock-yard will also more than repay its cost if applied to trees that crop freely. This work should not be neglected until the trees have become stunted from over-bearing.

Strawberry Plants.—Plants that bore heavy crops this season, and which were trimmed, cleaned, and mulched as soon as the fruits were gathered, are making capital crowns, the fresh leaf-growth being strong and clean. Young plants from layers put out this year also look promising. Destroy weeds that appear upon the ground, and remove "runners" from the plants. In places where the beds have been neglected, let the plants be trimmed at once and the ground made clean.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Less need for Shading.—At this season the grower should gradually expose the whole collection of plants to extra sunlight, so that the growths of the plants may be hardened, and they will then be more likely to remain healthy and plump during the coming winter. A free circulation of fresh air should be afforded on every favourable opportunity. At no other period of the year do the plants appreciate direct sunlight so much as they do now, especially such species as Dendrobiums, Catasetums, Cynoches, Mormodes, Epidendrums, Cyrtopodiums, Schomburgkias, Cattleyas, Lælias, the deciduous Calanthes, and all terete Orchids. Where such species as Aërides, Vandas, Saccobiums, Renantheras, and a few of the stronger-growing species of Angraecums can be afforded a position by themselves, the plants will require only the thinnest of shading under any circumstances; but such plants as Phalaenopsis, Cypripediums, Angraecum Ellisii, A.

modestum, A. pellucidum, A. bilobum, A. fastuosum, A. hyaloïdes, A. citratum, A. Kotschy, &c., Eulophiellas, Anætochilus, also many of the Oncidiums, Odontoglossums, and Masdevallias are very liable to suffer injury if exposed for any length of time to direct sunlight. To protect such tender-leaved plants a good plan is to dispense with ordinary shadings, and to whiten the glass immediately over them with a mixture of ordinary flour and water. Not only is this method a protection for the plants enumerated, but it allows the sun to shine upon the whole of the roof glass, thus assisting to maintain correct temperatures in the houses which is now so beneficial, and it permits extra ventilation whilst minimising the fluctuations caused by cold winds.

Atmospheric Moisture.—Now that the sunlight and heat are gradually diminishing and the external air is more moist, there is no necessity to maintain so much atmospheric moisture as was done during the hottest part of the season. This remark is especially applicable to the intermediate and cool houses, for a moderate degree of moisture should still be maintained in the warmer divisions in order to counteract the drying effects of fire-heat; but even in these divisions damping down will not be necessary so frequently as heretofore. The East Indian and Cattleya-houses may be damped to a moderate extent each morning and evening. A light sprinkling of the floors, stages, &c., early in the afternoon will be sufficient for the Mexican house; while the requirements of the inmates of the intermediate and cooler houses will be met by one thorough damping in the morning if the weather be dull, sprinkling the paths again in the afternoon if the weather is bright and fine.

Temperatures.—The following "night" temperatures should now be maintained: East Indian house, 65° to 70°; Cattleya, 60° to 65°; Mexican, about 60°. The higher readings should be maintained only when the external air is above or about 45°. When below 35° the lower ones are preferable, but when banking-up the fires at night and arranging the amount of ventilation, always allow for a fall of several degrees by six o'clock the next morning. The cool-houses may be kept at 50° to 55° or warmer, if the weather should continue mild, the lower ventilators being kept wide open all through the night. In the event of cold weather fire-heat may have to be used, but the temperature should not be increased beyond the lower reading. For Dendrobiums, Thunias, and other Orchids that are resting in the greenhouse, the temperature should not be allowed to fall below 55° for the next few weeks.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

French Beans that are growing in pots in cold frames should now be removed indoors, where everything has been made thoroughly clean, as was advised in a previous Calendar. Maintain sufficient heat to cause a buoyant atmosphere during wet or foggy weather. In bright and mild weather do not allow the pipes to become hot during the day, as this would be certain to encourage red-spider and thrips, two pests that are very difficult to eradicate when they have infested the plants, unless everything is cleared out, the house cleansed, and a fresh start made.

Excessive temperatures.—As the "forcing" season is now commencing it is most important for young cultivators to know that high temperatures are disastrous to the end in view. Many have an idea that a hot atmosphere will cause everything to grow well; but I would remind such persons that there are more plants ruined indoors annually by excessive heat than by any other means. I have seen seeds sown and kept in a higher temperature than they required, and because they did not germinate they were condemned as being bad; but the same seeds, after being indoors for weeks, germinated when placed in a suitable temperature out-of-doors. Rhubarb, which any "auld wife" can force by taking up a stool and placing it in a tub in her cellar, I have seen standing in a high temperature without making a move, but

when taken out-of-doors and allowed to remain there for a few weeks, was returned to a mild heat and started into growth freely. Seakale, Asparagus, &c., may be forced with better success if placed in a proper temperature after having been exposed to a few sharp frosts where they are growing, but even then, if the temperature is kept high, the produce will be inferior owing to having been drawn up too quickly, and it soon becomes unfit for table.

Cucumbers.—Where a continuous supply is required during winter, be careful to maintain a sufficient stock of plants. These may be obtained from seeds, cuttings, or layers. I have found the "layers" to afford a quick method of getting plants into a bearing condition. Break a pot into two halves, or knock the bottom out of a 6-inch pot, then choose a healthy growth and pull the point up through the pot to the length desired; then fill up with a light compost and keep the soil damp. Roots will soon be formed, and when the pot has become full of them the layer may be severed from the older plant, and be planted in a position where the atmospheric temperature will range from 60° to 65° with fire-heat, increasing to 80° or more with sun-heat. We have obtained an ample supply here during the winter months from plants in a temperature which seldom reached 65° by fire-heat, and was often as low as 55° in the morning. In all "forcing" operations it is important to maintain a degree of atmospheric moisture in accordance with the amount of fire-heat employed; the higher the temperature the more moisture is necessary.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peaches and Nectarines.—As soon as the leaves have fallen from the trees in the early-house, the trees should be given what pruning may be necessary; but if previous directions have been carried out the chief work to be done now will be that of cleaning, and regulating and tying of the shoots. At the same time do not hesitate to use the knife if the wood is crowded. By the use of a small stiff brush and 4 oz. of soft-soap to the gallon of water, thoroughly cleanse the trees and house. Afterwards apply a top-dressing of good yellow loam and wood-ashes to the borders. Let the border be saturated with diluted liquid-manure, and keep the atmosphere of the house as cool as possible. If ripe fruits are expected at the end of the month of April or early in May, and if the varieties are such as Hale's Early, Stirling Castle, and Royal George Peaches, and Lord Napier, Impératrice, and Early Rivers' Nectarines, it will be necessary to close the house early in November, but a month later will suffice for such varieties as Waterloo and Early Beatrice. Very little forcing should be done before the end of the year. Do not employ fire-heat until then, unless there is frost, and do not let the atmospheric temperature exceed 50° before opening the ventilators. It is in the early stages of Peach forcing that the greatest care is necessary.

Late Grapes.—Where these have had the advantage of a little fire-heat they will now be thoroughly ripe, and in quality and keeping properties they will be much superior to Grapes that ripen in October. Grapes will not "winter" satisfactorily unless they have ripened perfectly. Fire-heat will now only be necessary in order to prevent the temperature from falling below 50°. Ventilate freely upon all favourable occasions. Difficulty is sometimes experienced in keeping ripe Grapes in good condition because the houses are not proof against drip, and November being generally unfavourable, if there is a Grape-room the fruit had better be cut and removed there when the Grapes are perfectly ripe. Where there was not a Grape-room, I have been successful in making a room in a dwelling-house serve the purpose. The principal evils to guard against in the preservation of Grapes are those of "damp" and "cold." By cutting the Grapes early in the season it is a benefit to the Vines, because they may be afforded manures during the autumn and early winter months, and the work of cleaning Vines and vinery be commenced. Inside and outside borders can also be kept in a much more

satisfactory and natural condition when the Grapes have been cut; and if the vineries are required for autumn and winter-flowering plants, the moisture arising from the applications of water to these plants would be most injurious to hanging fruit.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Stephanotis.—Plants which have completed their growth should be afforded as much light and air as is possible without causing injury to other plants occupying the same house. This is necessary for the thorough maturing of the shoots. The shoots should be thinly disposed upon the trellis, and if they are at all crowded, remove the weakest of them.

Allamandas should be induced to rest by reducing the amount of water supplied to the roots. Water may be withheld until the leaves flag, but a light application should be given then. If this process is repeated a few times the leaves will begin to fall, and the plants may then be pruned sufficiently to remove the unripened portions of the shoots. Place the plants afterwards in a house having a minimum temperature of 55° for the winter, or until it may be necessary to start them into growth again. It is not safe to place Allamandas in a lower temperature than 55°. While the plants are at rest only sufficient water must be afforded to prevent the matured wood from shrivelling. Where Allamandas are planted out, withholding the water and lowering the temperature of the house during the winter to a degree to suit the other occupants is all that can be done in the way of affording rest. If cuttings of A. Williamsi were inserted in January, and the plants treated as advised in this Calendar, bushy specimens will have been produced which will now be showing their flower-trusses. The plants should be given a light position in the stove, and when the flowers are sufficiently open the plants may either be placed at the warm end of the conservatory, or be used for house decoration, either as plants or in the cut state. The flowers, being on long, stiff growths, are very effective when used for filling large vases.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Carnations and Pinks.—Young plants (layers) that have made sufficient roots may be planted into their permanent quarters. Take away a little of the soil from each plant and sever the stem with a sharp knife. If they are to be planted in the same beds in which the layers were made, lift all the plants from one bed, and lay them in some soil in the shade. Then dig up the bed and dress the ground as previously advised for those to be planted in a fresh piece of ground. Road scrapings, containing considerable sand, that have been thrown together for some months, may be added with advantage. The soil should now be in a good condition for planting operations, but will require to be made moderately firm before planting is done, and should be afterwards made firm around the roots of the plants. Do not allow the roots to become at all dry before they are replanted. Pinks may be planted closer together than is advisable in the case of choice varieties of Carnations. Pinks that have been rooted in frames can also be planted out if this work has not been done already. Old stools of Pinks not required for planting may be "laid in" in the nursery ground, after the roots have been shortened, and they will furnish some early "pipings" for propagation another season; but if the winter proves to be wet and cold a few of these plants may be lost.

Subtropical Plants.—All those required for another season should be removed to the houses without delay. Any specimens that were plunged in pots will require to be re-potted or to be placed bodily inside a pot of larger size until next spring. Succulent (Cactaceous) plants may sometimes be left out-of-doors until the end of October without receiving injury, but it will depend upon the character of the weather.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, OCT. 11. { National Potato Society's Show at the Crystal Palace (2 days).
WEDNESDAY, OCT. 12. { Royal Botanic Society's Exhibition at Regent's Park. United Horticultural Benefit and Provident Society's Annual Dinner at Holborn Restaurant.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY NEXT—Annual Sale of Nursery Stock at Sunningdale Nurseries, Sunningdale, Berks, by Protheroe & Morris, at 12.30.
TUESDAY NEXT—Clearance Sale of Nursery Stock at Floral Nurseries, Maidenhead, by order of Mr. R. Owen, by Protheroe & Morris, at 11.30.
WEDNESDAY NEXT—Second Annual Sale of Nursery Stock, at the Old Nursery, Spring Grove, Isleworth, by order of Mr. H. A. Bear, by Protheroe & Morris, at 12 o'clock.—Palms, Plants, Azaleas, &c., Lillium Harrisii, and Palm Seeds, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 4.
THURSDAY and FRIDAY NEXT—Annual Sale of Nursery Stock at Tunbridge Wells Nurseries, Tunbridge Wells, by order of Messrs. T. Cripps & Sons, by Protheroe & Morris, at 11.30.
FRIDAY NEXT—Unreserved Sale of Duplicate and other Orchids, from the "Chessington" Collection; also Imported Orchids from other sources, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —51.7°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, October 5 (6 P.M.): Max. 60°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 6 (10 A.M.): Bar., 29.6; Temp., 57°. Weather—Dull.

PROVINCES.—Wednesday, October 5 (6 P.M.): Max. 57°, South Coast of England; Min. 51°, North-East Coast of England.

The Great Fruit Show.

TAKING into consideration that the Hall is still unfinished, and that the offices and other apartments are yet in the hands of the builders, the great Fruit Show held on Tuesday, Wednesday, and Thursday last, in the new Horticultural Hall in Vincent Square, must be pronounced to have been a great success. The more the Hall is used the more evident becomes the excellence of the accommodation it offers, the greater the justification of those who supported Baron SCHROEDER'S scheme for a building which should supply the public requirements of horticulture, and the warmer our congratulations to the architect. It is a source of disappointment to have to add that the contributions of the faithful, even now, furnish a quite inadequate measure of their faith. This is a defect that can easily be remedied, and the sooner the better. Spacious as the Hall is and admirable as is its lighting, it was not large enough to contain all the exhibits that were forthcoming, and an upstairs room had to be made use of as well as the cellars in the basement. This was an exceptional occasion, it must be remembered, and it must also be borne in mind that, if a more rigid selection had been exercised, an amply representative exhibition might have been provided without being obliged to have recourse to supplementary accommodation. If quantity be desired to impress the

public with a due sense of the importance of fruit culture in Britain, surely the exhibits in the body of the Hall were quite sufficient for that purpose.

We make this comment after having heard some remarks to the effect that after all the Hall is not large enough. We take it that if some principle of selection be not adhered to, there will be some occasions, like the present one, when the available space will not be sufficient. But after all it is not quantity that is desired so much as quality and variety. We want to see the best, the most representative, and that which most fully satisfies particular requirements. Looked at from this standpoint, the display was eminently satisfactory. The Apples, especially those from Kent, were superb examples, the skin

tickets. To be told that a particular exhibit forms part of "Class 45" is not particularly interesting, and is by no means instructive. We want to know what Class 45 includes, so as to be able to judge of the conditions imposed and of the way they have been fulfilled. It is true the Catalogue furnishes this information; but when a visitor, and still more a reporter, is hampered with the implements he requires for his work, he does not appreciate any unnecessary addition to his impedimenta. The addresses on the show tickets were also less full than they should have been.

Judging from the inquiries made of us, Vincent Square, Westminster, is at present not sufficiently known to the horticultural public. We have even known a party of



FIG. 110.—PEAR BELLE JULIE.

in the best samples clear, unspeckled, almost ideal in purity and freshness. The colouration too was very fine, though we have a vague impression that, so far as richness of colouration is concerned, we have occasionally seen finer examples.

Before another year comes round we trust some attempt may be made to utilise this splendid material in some more effective way. Plates of Apples and Pears are apt to be a little monotonous to the eye, particularly as the fruit comes under the category of the forbidden! A central trophy, elegantly constructed with suitable foliage, would greatly add to the picturesqueness of the scene, and by no means interfere with the formal arrangements entailed by the necessities of rigid comparative examination. Another suggestion we make in the interests of the visitors, and that is that a little more information be added on the

ladies turn back disappointed at not having succeeded in taking the right turn out of Victoria Street. This suggests the necessity of affixing to the lamp-posts in the vicinity a few plain indications as to the whereabouts of Vincent Square. Vast as London is, the traffic mainly follows certain main routes, so that even the average Londoner is perplexed when he finds himself off the usual track, even if it be, as in this case, but a few hundred yards.

Full details of the Exhibition will be found upon another page; but we may remark here that among the varieties of Apples shown Gascoyne's Scarlet Seedling was very prominent. The season has been exceptionally favourable to this excellent Apple, and the specimens shown were not merely remarkable for large size, but they possessed rich colour, and had developed the characteristic "bloom" that

makes this and some other varieties so attractive. Among newer Apples that few could have overlooked was "Allington Pippin," the fruits of which are in every respect valuable for exhibition, and their fair appearance is allied with good quality. The variety "Charles Ross" is another of that class which appears to be essentially suited for the exhibition table owing to the perfect form, unblemished skin, and delicate colour of the fruits. But this variety has not been sufficiently long in general cultivation to be proved. Some cultivators are pleased with it, others are not, except for the purposes of exhibition.

In the classes for Pears, and even in the general collections of hardy fruits from nurserymen, the comparatively new variety "Marguerite Marrillat" was very conspicuous

of the fruits shown, and consider it to be one of the very best Pears, from the consumer's point of view, that has been introduced for a long time past.

There was a greater display of Plums than has been usual at these shows, and Peaches and Nectarines were present in considerable numbers. Grapes were upon the whole of good exhibition quality, but not wonderful, and in the two most important classes there were no exhibits.

In the collections of fruit grown indoors, excellent quality was observable in the first prize collection for six dishes, where Grapes, Peaches, Apples, indeed all the fruits were superb. The larger class for nine dishes was won by Mr. Goodacre.

The classes in Division II. for collections of fruit shown by nurserymen were so well

OUR ILLUSTRATIONS are this week almost entirely confined to the representation of varieties exhibited at the great Fruit Show, and reported on in our Special Supplement. The photographs whence the illustrations were taken were supplied by Mr. CHARLES JONES, Ote Hall Gardens, Burgess Hill, and show the varieties just before they are fit to be gathered. Dr. COOKE's article on p. 249, showing the probable identity of the fungus causing "Bitter-rot" in Apples, with that engendering one form of canker, is of great significance.

NATIONAL FRUIT GROWERS' FEDERATION.—There was a good attendance of members of the Council at the meeting at the Caxton Hall, Westminster, on Monday, October 3. The President, Mr. F. S. W. CORNWALLIS, occupied the Chair, and he was supported by Col. LONG, M.P., Col. C. E. WARDE, M.P., and nine leading growers from Kent, Worcestershire, Hampshire, and Cambridge-shire. The principal business was the consideration of the past fruit season and the efficiency of the railway services in connection therewith. A number of letters from members were read, some of them complaining of serious losses by delay in delivery, scarcity of properly constructed vans for the conveyance of the heavy crop to distant markets, and the harsh interpretation placed by the Companies on the conditions under which they carry at owner's risk. The full consideration of these matters was postponed till the next meeting, when it is proposed to appoint a sub-committee for that purpose. The representative of the Evesham district reported a great improvement in the services of the Midland and Great Western Railways, and especially in the supply of improved vans on the former line. Communications from the Irish Agricultural Department on the improved classification and marketing of fruit, and from the Bristol Retail Fruit Dealers' Association on the sale of foreign fruit as home-grown, were read, and both of these important subjects will engage the serious attention of the Council. The next meeting was fixed for Monday November 7, at 2.30 p.m., at Caxton Hall.

MR. STEPHEN OSBORNE.—It is only recently that we have been made acquainted with the death of this able gardener. Mr. OSBORNE was for many years in the service of the Duke of Fife as head gardener at East Sheen Lodge, near Richmond. He was one of the type known as "all-round gardeners," but his retiring, unobtrusive habits rendered him less well known than his sterling qualities would have justified. Mr. OSBORNE was a constant attendant at the meetings of the Gardeners' Royal Benevolent Institution, in which he took great interest.

THE POTATO SHOW.—An immense entry list has been received for the exhibition of Potatoes which is to be held at the Crystal Palace on Tuesday and Wednesday, October 11 and 12. Almost every grower of standing in the country will be represented. A guide to the show has been issued, and may be had free from the Secretary, Mr. WALTER P. WRIGHT, Postling, Hythe.

POTATO-GROWING IN THE NORTH.—The firm of MESSRS. LAIRD & SINCLAIR, at Monifieth Nursery, have been giving the important subject of Potato-raising much consideration for the past year or two. During a recent tour of inspection by a party interested in Potato-cultivation, we are informed that various "sets" were lifted and weighed. Of Northern Star two plants were dug in different places on the ground. The first had thirty-three tubers, weighing 7 lb., and the second twenty-five tubers, weighing 7 lb. One "set" of Duchess of Cornwall lifted had fourteen marketable Potatoes, and weighed 5½ lb. A plant of The Factor had 6 lb. of beautiful oval-shaped tubers. Sutton's Discovery had twelve tubers. One "set" of the variety King Edward VII.



FIG. 112.—PEAR DOYENNÉ BOUSSOCH.

for its large size and attractive appearance. This Pear was granted an Award of Merit by the Royal Horticultural Society in 1899, but has not been so conspicuous at any previous exhibition as it was on this occasion. In general appearance the fruits bear a little resemblance to those of Beurré Clairgeau, as they possess the reddish colour characteristic of that variety. In the case of "Marguerite Marrillat" this colour appears in streaks over deep brown, and the fruits are among the most attractive. They are ripe about the end of October, and the flesh is rather aromatic but sweet. The nurserymen describe the variety as a "grand addition to autumn Pears."

Writing of Pears reminds us of the perfectly new one described under "Awards of Merit" on p. i. of the Supplement to this issue, named "S. T. Wright." This has been raised from a cross between the varieties Beurré Bachelier and Williams' Bon Chrétien. We had an opportunity of tasting one

filled, and many of them were of such quality that we fear the judges found the work of adjudication unusually onerous. It was remarked that in the "District County Classes" the varieties of Apples and Pears shown from the northern counties were almost identical with those from Kent and other favourable localities. But this is explained by the fact that only certain varieties are sufficiently good in appearance to be shown against certain other varieties, and therefore the northern cultivator exhibits those fruits which possess the best appearance, even though they have proved to be unprofitable sorts for his own district.

Having obtained, by the courtesy of our readers, a census of the best varieties of Apples in almost every locality in Great Britain and Ireland, we hope to publish a table shortly that will afford a guide to those who intend to plant Apple-trees during the coming season.

had thirty-one tubers. The Eldorados being in full growth, the plants were not lifted. The firm have numerous trials of all the leading varieties suitable for garden cultivation.

"A GENERAL REVIEW OF THE GENUS PINUS."

—The following remarks upon this paper by Dr. M. T. MASTERS, F.R.S., published recently in the *Journal of the Linnean Society* (vol. xxxv., 1904, No. 248, pp. 560—659, plates 20—23, six figs.), appear in the current issue of the *Botanisches Centralblatt*:—

"In the present treatise the genus *Pinus* is taken as including those *Abietineæ* in which both shoots and leaves are dimorphic, whilst *Cedrus* and *Larix* are regarded as its nearest allies. Following on a brief general discussion of the morphology (pp. 560—563) a chapter is devoted to the histological characters of the leaf (pp. 563—567), based on an examination of numerous dried and living specimens. An important feature is found to lie in the number and characteristics of the cells of the endodermis. The presence of a single or double vascular bundle is further of taxonomic value, and is more useful than the position of the resin-canals. Other features, which were found to be of use in classification, are the shape of the meristele in transverse section, the presence or absence of a layer of thin-walled cells just beneath the epidermis, as well as the position and number of the rows of stomata. The structure of the cotyledons and primordial leaves is of a less highly developed character than that of the permanent foliage, the vascular bundle often being unbranched in the former, when it is double in the adult leaves.

The systematic portion of the paper (pp. 568—631) comprises a [partial] description of seventy-three species, which are classified into two main divisions, *Tenuisquamæ* with relatively thin cone-scales, and *Crassisquamæ*, in which the woody cone-scales are markedly thickened towards the apex. The *Tenuisquamæ* include two sections—*Strobus* with marginal resin-canals and distinctly winged seeds; and *Cembra* with five-leaved dwarf-shoots, median resin-canals and almost or entirely wingless seeds. The *Crassisquamæ* are divided into two main groups, each including a number of sections; in the one group the bud-scales are deciduous, loosely imbricate and membranous; in the other they are persistent and subcoriaceous. The sections, included in these groups, are based on morphological and anatomical characters. In the course of the description of the species teratological features are mentioned, some of which are figured. The remainder of the paper (pp. 633—658) is devoted to a chronological list of specific names, based on the enumeration given in the *Index Kewensis*. On the plates photographs of the transverse section of the leaf of eleven species are reproduced."

THE DAIRY SHOW.—Fruit seems to have invaded the precincts of the dairy farmer. At the show held in the Agricultural Hall on the 4th, 5th, and 6th inst., Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, put up a table of the leading varieties of Apples suitable for market gardeners, such sorts as Bismarck, Lane's Prince Albert, Cox's Orange Pippin, Peasgood's Nonsuch predominating. Messrs. W. & J. BROWN, of Stamford, also displayed a mixed group of plants, including their new "Cactus-flowered" Pelargoniums. The show was well attended this year, and the band of the Irish Guards partly drowned the farmyard pandemonium.

RUBBER-VINES.—By this heading and by adopting the wide signification given by the Americans to the word "vine" we may translate the original *Lianes Caoutchoucifères*. The book bearing this title is devoted to the consideration of the Caoutchouc-yielding plants of the Congo, and it is the joint work of Dr. DE WILDEMAN and of M. L. GENTIL, the Curator of the Brussels Botanic Garden. In the beginning of the book the surprising development of the Caoutchouc industry in the African territories administered by the Belgians is illustrated by statistical tables. The amount imported into Antwerp in 1903 from the Congo was no less than 5,180,401 kilogrammes. A botanical investigation of the plants yielding the rubber was therefore imperatively necessary, the more so as many plants yield a milky juice of inferior quality, and it is necessary to discriminate between the good and the bad. The methods of propagation and cultivation also

needed to be enquired into. For this purpose M. GENTIL, who was charged with forestry duties in the Congo State, made the requisite studies on the spot, and, by the aid of drawings executed by Mr. DURANT, those concerned will be enabled to discriminate between the good and the bad lianas, and to avoid the loss occasioned by the planting of inferior varieties. The species recommended for cultivation are various Apocynaceous plants, species of *Landolphia*, such as *L. owariensis*, *L. Droogmansiana*, *L. Gentilii*

for those concerned in the cultivation of the plants and their utilisation in commerce. A large map, several illustrations in the text, and an index complete a volume of the highest interest and value to those concerned in the caoutchouc industry.

"THE JOURNAL OF AGRICULTURAL SCIENCE."—The establishment of a new journal under the above title is proposed. It will be issued under the auspices of the Cambridge Uni-



FIG. 113.—APPLE STIRLING CASTLE, GROWING IN A GARDEN AT BODENHAM, LEOMINSTER.

(From a photograph supplied by Mr. Davis.)

L. Klainii; *Clitandra Arnoldiana*, and *C. Nzunde*. Other species of *Landolphia*, *Carpodinus*, and *Clitandra* are banned as useless. The best method of collecting the caoutchouc, the steps to be taken to regulate the tapping, to conserve the forests, and to manage the plantations, are also explained. There are certain species whose rhizomes furnish caoutchouc to a larger extent than the aerial stems; these also are described and classified. The description of the several species is furnished by Dr. DE WILDEMAN, and these, together with the twenty-six coloured plates, constitute a veritable mine of information

versity Department of Agriculture. The following extracts from the editorial preface will sufficiently indicate the aim of the projectors:—

"During the decade 1890—1900 a large number of institutions for the teaching of agricultural subjects were founded throughout the country, and, in order to create an interest in their work among the farming community, these institutions have carried out an immense amount of pioneer work on experimental plots in all parts of the country, dealing with the manuring of various crops and kindred subjects. The results of these experiments have been published in the form of separate pamphlets and distributed by the County Councils among those interested. After ten or

twelve years' work, there are now about twenty-five Agricultural Colleges in England, many of which are equipped with permanent laboratories and experimental farms, and are beginning to devote their attention to definite scientific work in chemistry, botany and the other sciences bearing on agriculture.

Work of this kind is too technical for publication by the ordinary chemical or botanical journals, nor would these journals bring it before its proper constituency. It is again not sufficiently popular for inclusion in the Journals of the Board of Agriculture and the Royal Agricultural Society. There is not therefore in this country a general channel for the publication and discussion of work of this nature, which at present appears solely in the annual reports of the various agricultural colleges, and is lost among the mass of papers intended primarily for farmers. There is evidently an urgent need for a journal devoted entirely to the publication of definite scientific work on agricultural subjects, containing: (1) Original papers. (2) Occasional *résumés* or critical articles on recent advances in the various branches of agricultural science. (3) Notes on the

DAMAGE TO CHRYSANTHEMUM FLOWERS.—At the Bristol County Court on the 29th ult., Mr. GEORGE WARREN DRAKE, nurseryman, of 44, Cathays Terrace, Cardiff, obtained a judgment for £8 and costs against the Great Western Railway Company for damage caused in November last year to some Chrysanthemum flowers during transit as passenger's luggage from Cardiff to Devizes, where the flowers were to have been exhibited at the Chrysanthemum show.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

FRUIT AT WROTHAM PARK.—It is always interesting to view a good collection of growing fruit, for apart from refreshing one's memory of the varieties seen, there is a great interest in observing the method of cultivation. The collection of

June, I feel confident that I shall be able to show him a crop that he will not despise. I have a good crop at the present time of twenty-six fruits. In 1894 I had charge of two plants growing in a small box, and these carried eighteen handsome fruits which weighed 36 lb. The following year two plants of a seedling variety in the same position carried eleven fruits weighing 59½ lb. My employer at that time stated that this was the finest evidence of Melon culture he had ever witnessed. Jno. Snell, Farnley Gardens, Olley, Yorks., September.

— I was very much interested in the short article by Mr. W. H. Clarke, but I would like to know what sort of soil was used, and the average temperatures by night and day, also the distances apart at which they were planted, and the number of fruits produced by each plant. Surrey.

CHRYSANTHEMUM "SOLEIL D'OCTOBRE."—Several beds of this useful variety have now a fine effect in Victoria Park near the Chrysanthemum-house and yard. The plants were put out early in the season, and beyond being disbudded in the usual way they have had no special attention since they were turned out of their pots. The blooms are of surprising size and depth, quite equal in fact to many blooms of other varieties that are placed on exhibition boards in competition later in the season. The plants were grown very sturdily, they are furnished with well-developed dark-green foliage; all the pale straw-coloured blooms contrast well with darker flowers. The cuttings were struck in February, and the plants are now of even height, about 3 feet 6 inches from the soil. They are the best examples I have seen of large blooms on plants grown in ordinary flower-beds. C.

HYDRANGEA HORTENSIA.—I herewith send you a photograph of four plants of *Hydrangea Hortensia* growing by the side of the house of Mr. George Ayling, Privett, Alton, Hants, who planted them in the spring of 1894. In the two following winters they were killed to the ground-level by frost, only to grow again from the base with renewed vigour; and since the year 1896 they have escaped injury (excepting that inflicted by late spring frosts) without any other protection than the shelter provided by the house. They have flowered more or less every season, and are much admired by everyone who sees them. This year the four plants carried no fewer than 260 trusses of flowers. The plant near the porch has blue flowers, whilst the other three have pink ones. One plant carried about an equal number of blue and pink flowers. No minerals have been used in their culture. The Rev. J. Hosegood, Froxfield Vicarage, Petersfield, has also some plants carrying both blue and pink flowers. He suggests this is due to old age, for several years the blooms were pink only, and in this case also no manure or minerals have been used. T. Down, Basing Park Gardens, Alton. [Excellent plants, producing a very bold and handsome effect, but we have illustrated similar specimens. ED.]

FRUIT GROWING.—We are again treated to another phase in Mr. Crump's Madresfield Court Estate's fruit-growing business, inasmuch as he now converts the whole of his own valuation of 10,000 trees at £5 per tree = £50,000, and also that of the Worcester valuer, 10,000 trees at £10 per tree = £100,000, into what he calls "capital." This is rather knocking down the "figure-head" which he set up with a vengeance. To this I do not in the least object; but I do think Mr. Crump in his first communication ought to have been a little more explicit, and not left us to form our own conclusions. But whether he meant capital or interest thereon, that does not affect the case. Let either or both of the above-mentioned figures be taken as invested capital, which should be representative of a yearly dividend, but of which Mr. Crump chooses to be judiciously silent. An asset of capital in fruit-trees might probably be of some value to an estate, but before embarking in fruit-tree planting, even were the trees provided him, a tenant farmer would have a right to know from the fruit-tree expert how and when he was to get a remunerative dividend. Meantime, rents, rates and tithes would be going on all the time whilst the trees were still



FIG. 114.—PEAR BEURRÉ HARDY.

more important papers in British and foreign agricultural periodicals. (4) Reviews and discussions.

Arrangements have been made with the Syndics of the Cambridge University Press to begin the issue of a *Journal of Agricultural Science*, under the editorship of Messrs. T. H. MIDDLETON, T. B. WOOD, R. H. BIFFEN, and A. D. HALL, in consultation with other gentlemen.

The Journal will publish only definitely scientific work in agricultural science, and will not include the results of the ordinary trials of manures and varieties for demonstration or commercial purposes.

It is proposed to issue the Journal as material accumulates, aiming at quarterly parts of about 100 royal 8vo. pages, four parts to constitute a volume. Price to subscribers, 15s. net per volume, post free, payable in advance. The first number will be published in January, 1905.

Intending subscribers are requested to send their subscription to T. B. WOOD, University Department of Agriculture, Cambridge; or to any bookseller, or to the publishers, Messrs. C. J. CLAY & SONS, Cambridge University Press Warehouse, Ave Maria Lane, London, E.C. Papers for publication should be sent to T. B. WOOD, M.A., University Department of Agriculture, Cambridge.

fruits at Wrotham Park was the best I have seen this season for size and colour, and the crop was very heavy. The majority of the Apple trees were "root-pruned" two years ago, and all have benefited by the treatment, with the exception of the variety King of the Pippins, trees of which are not making the desired amount of growth, whilst the fruits are small. Stephen Castle.

QUICK GROWTH OF MELONS.—Referring to the note by Mr. W. H. Clarke on p. 228, I must say that it is good work to cut ripe Melons in eleven weeks from sowing the seed. It is astonishing what results may be obtained by giving close attention to matters of ventilating and closing the house. I fear in many instances much time is lost by neglect. As one who for some years has taken more than ordinary interest in Melon culture, I differ from Mr. Clarke in the matter of "stopping" the shoots. The stopping principle has been my practice for a dozen years. I take three cordons, and restrict the roots to a narrow box; and until I can see some substantial proof of a better method, I shall continue the stopping. Gardening friends who have seen our Melons each year say they have never seen finer crops; and I may go so far as to say that if your correspondent should be in the north of England next

unproductive, and also afterwards, whether the caprice of seasons allowed the trees to be productive or otherwise. All this is not good enough for a tenant farmer who has no interest whatever in his farm beyond that which the experience of his best methods of cultivation can yearly make it yield for him. He cannot afford to speculate. We read of Apples in Lincolnshire—the variety is not mentioned—being sold for cider-making at 25s. per ton, which includes their gathering and taking away. This is rather discouraging to enthusiastic fruit-tree planters, but it is only what may be expected when there is a full all-round crop throughout England; and those are about the prices which people not having the opportunity of selling by retail will have to put up with. A penny a pound seems a very moderate price for Apples, but at that price the amount per ton is £2 6s. 8d.; at 2d., £18 13s. 4d.; at 3d., £28. I mention these prices simply to show what a miserable price 25s. per ton appears to be. In taking leave of this rather interesting controversy, I sincerely trust that the views of Mr. Crump on profitable fruit-tree planting will prove the correct ones. I have planted a few trees, which this year have fruited splendidly; and I intend to plant-out a few more which I have already prepared for moving. Apple-trees are beautiful to look at when in flower, and again when in liberal and lovely fruitage; and if we cannot sell all to a profit, it is a pleasure to have a few to give away to those of our friends who have none. *W. Miller, Berkswell, Sept. 26.*

DEEPLY-BURIED BULBS.—I can endorse Mr. Jenkins' remarks at p. 235 regarding the vigour and floriferousness of deeply-planted bulbs. I may here mention a method of planting bulbs which in special circumstances I believe I advocated in the pages of the *Gardeners' Chronicle* several years ago, with a view of economising the labour and time incurred in the annual lifting and transplanting of the various kinds and varieties of bulbous plants used in the beds in the Italian flower garden at Longford Castle, Salisbury. For flowering during the spring months all the bulbs were dropped into holes about 15 inches deep, made with a setting-stick of suitable length and thickness (the mould in the beds being deep, light, and rich), or a light crowbar, the holes being filled-in in the process of planting. Thus planted, a dressing of short, well-decomposed stable-manure could be, and was, forked into the beds every year immediately before planting the summer and early autumn-flowering plants, without in any way interfering with the bulbs, which increased annually in numbers, size, and floriferousness. Moreover, bulbs planted in light, rich mould, from 2 to 3 feet deep, as was the case at Longford, make and mature their growth under more equable conditions as regards warmth and moisture than are possible in the case of bulbs planted only 6 inches under the surface in October, and taken up the following May, and consequently they produce each succeeding spring a rich harvest of large, well-developed flowers, free of expense after the initial cost of bulbs and planting has been accounted for. Therefore I beg to draw the serious attention of intending planters of bulbs in flower-beds and borders to the method of planting indicated above, and for the reason described, now that the time for planting bulbs is at hand. *H. W. Ward.*

— It is possible that we err greatly in planting some bulbs too shallow, and that deeper planting is advisable in many cases. I generally practise much deeper planting with Snowdrops than is usual, and I find that this induces greater vigour, and the flowers are usually both larger and finer than when planted at the ordinary depth. My attention was first drawn to the question some eighteen or nineteen years ago, when I had occasion to lift some Snowdrops which came up in a bed in which Dahlias were planted in summer, and from which most of the Snowdrops there originally had been taken before the bed was deeply dug and manured for the Dahlias. In taking out the bulbs, some had been left in the soil, and these sent up great leaves and tall stems, giving large flowers. On attempting to remove the bulbs which remained, I was struck

at finding them so deep that they were difficult to get at. Apparently they were unnaturally deep, as the plants were forming new bulbs above the old ones; but the effect on the flowers was so remarkable that from that time I have adopted deep planting for all but the weaker varieties in my collection of Snowdrops, with most satisfactory results. The only drawback is the greater difficulty experienced if it is required to take off a bulb or two of any special form, as one has to go so deeply down. I have also tried the same practice with Narcissi, Scillas, and Chionodoxas, and with most satisfactory results. I have not, however, found deep planting answer so well with Crocuses. *S. Arnott, Carsethorn-by-Dumfries.*

THE "PLANET, JUNR.," HOE.—When visiting Mr. Allen at Gunton Park Gardens, near Nor-

marker being made to move along a rod, so that of course the wider the space the heavier it becomes, and therefore the greater weight upon it makes the drill deeper, which mostly is required for seeds that have to be sown at greater distances. The drill can be used for Carrots if the seed is "haled." "Enquirer" will find that there is hardly a seed in the garden that cannot be sown with this tool; the small roller behind is generally sufficient to cover any seeds. *G. W., Y., Workshop.*

ROMNEYA COULTERI.—In South Devon I have seen this Californian Poppy flowering freely, but I never saw more luxurious growth and a greater abundance of flowers than when visiting recently the gardens of Lord Battersea at Overstrand, in Norfolk, where it appears to enjoy the sandy soil and sea breezes of this delightful garden.



FIG. 115.—PEAR BEURRÉ EASTER.

with, in September, I was much interested in watching a handy-man use this hoe, which he much preferred to a Dutch hoe. I was surprised to see how near he could go to the Onions, cutting up the weeds without once touching the bulbs. Stones are not seen on the surface of the Gunton soil to any extent, but here, where there are innumerable flint stones, this hoe could not be used so successfully. In fields overlying chalk but a few inches, and where there are but few stones, I hope to make good use of this hoe next year among the Turnips, &c. *E. Molyneux, Swanmore Park, Hampshire.*

— In answer to "Enquirer," p. 209, and "A. F. G.," p. 245, I would like to say that I consider this one of the best tools for the garden if used whilst the weeds are small. As to the drill, I may say that in the seed-growing districts of Essex it is used to a great extent for sowing flower and vegetable seeds. It will sow almost any seed, from Turnips to dwarf Beans, &c. It draws the drill for the succeeding row, to be sown in at the same time as sowing the seeds. The required depth is gained by the

When given space to develop fully this is a glorious plant with its deep glaucous leaves and pure white fragrant blossoms. This *Romneya* resents interference with its roots, therefore before planting it is necessary to give some consideration to the choosing of the site in order that there may be no necessity to move the plant subsequently. *E. M.*

A LUNAR RAINBOW.—Two miles north of Stamford, on the great North Road, I saw on Sunday evening, September 25, at 7.15, a rainbow from the reflection of the full moon just clear of the horizon in the east, when a very heavy storm appeared in the west. I think this must be uncommon. *A. Laker, Tickencote Hall Gardens, Stamford.* [Such an occurrence as that described, by our correspondent is certainly not common, but we have seen it on several occasions. *En.*]

PUBLICATIONS RECEIVED.—*Flora and Sylva* for October, includes coloured plates of *Calceolaria plantaginacea* and *Magnolia Campbellii*. — *Cassell's Popular Gardening*, part xiv. — *The Bertrams*, by Anthony Trollope, being the twentieth issue of Mr. John Lane's pocket library. — *The Book of the Iris*, by R. Irwin Lynch, published by John Lane.

NURSERY NOTES.

MESSRS. G. BUNYARD & CO., MAIDSTONE.

HAPPILY the weather was fine and dry on the occasion of a visit we made in September to these great Fruit and General Nurseries. The Allington soil when wet is rather adhesive, and the nurseries comprise an area of some 120 acres, which will shortly be increased to about 160 acres.

To the visitor fresh from other functions the nurseries present much that is bewildering; not that fruit especially, or nursery stock in particular, conduces to bewilder, but it is the enormous quantities of various fruit-trees, for instance, that are seen on every hand. Those who would test the capacities of soil to produce crops should inspect such a nursery as is that at Allington, where every foot of the ground is fully occupied; and when they note the almost densely planted areas of

Currant. In another direction a bigger breadth of one-year-old plants is seen. Gooseberries and Red Currants are also represented in great numbers. Apples are essentially the fruit of the season, and they are represented here in what can only be described as immense quantities. When for instance we are shown a breadth of 30,000 standard and half-standard for market purposes specially, we realise that this mass is but a small portion of the uncountable numbers that are in evidence on every hand. Of all the stock from end to end, it is but true to say that whilst growth is good but not over-luxuriant, every tree or bush is as clean as it is possible for trees to be. But then that cleanliness is as much due to the excellent cultivation given, for neatness of the most perfect order prevails everywhere, as it is to any other cause. Whilst Apple trees of all forms are seen by scores of thousands, there are old trees also, some twenty to thirty years planted, tall orchard-

fine; the older and too little grown Ross' Nonpareil, Cockle's Pippin, Mabbott's Pearmain, Brad-dick's Nonpareil, Wealthy (so fine and so beautiful), Old Golden Reinette, Mannington Pearmain, St. Edmund's Pippin, Baumann's Red Reinette (brilliant in colour), King of the Pippins, Mrs. Phillimore (new), a beautiful free-fruited variety, the trees loaded with fruit; this should make a fine market Apple. Also many others too numerous to mention.

Of kitchen varieties, on dwarfs, were Bramley's Seedling, Byford Wonder (a grand new Apple, somewhat after the style of Warner's King), Hermead Pearmain, Ontario (a very fine, handsome, free cropping late Apple), Newton Wonder, Baron Wolseley (specially fine in growth and fruit), Bismarck, Cox's Pomona, Tower of Glamis, Lane's Prince Albert, Hambling's Seedling (fruit pale green, keeps late, a huge crop), Belle de Pontoise, Seaton House, and dozens of others, all good.

A few less known Apples are Wagener (fine and late), Bielo Borodawka (superior to Duchess of Oldenburgh), Veitch's Beauty of Stoke (clean and handsome), Cranston's Lord Hindlip (a very good first early Apple), and Early Victoria (ripe and over, but specially good as an August Apple).

Good as are the outside fruits—and the huge fruit-room is already half filled with excellent samples—the best fruits of all are found on some 200 trees in 12-inch pots, standing out-doors on an ash-floor and protected from birds by nets thrown over a light framework. There are indeed here beautiful samples. These are grown to furnish orchard-house fruits for the Royal Horticultural Society's Fruit-show (see Supplement). It is evident that the cool external air suits these fruits better than does the warm air of the orchard-houses, where Peaches and Pears are so finely finishing off.

Pear-trees in the open nursery are abundant. As with Apples these are found in all sorts of forms, from huge standards of considerable age, down through pyramid, bush, fan-trained, horizontal-trained, and cordons, and in such numbers as to astonish all who see them. Fruit, too, is happily abundant, so that the best productive characteristics of each are evident. In all directions every inch of wall or board space on buildings is utilised by trained trees or cordons in good fruit. That is of advantage to the intending purchaser. A few varieties worthy of special mention are Etoile d'Heyst, Beurré Jean Van Geert (very fine, handsome fruit), Doyenné du Comice (always so good), Petite Marguerite (early, a great bearer), Marguerite Marillat, Louise Bonne of Jersey, and Marie Louise—but all were of great excellence. Cherries especially, as standards for orchard plantings by tens of thousands, and trained for walls, were a noteworthy feature; Plums the same, apparently enough being seen to supply all the nation's demands. Trained and even standard Peaches and Nectarines are grown in great numbers, and splendid trees are ready for sending out. All other fruits are well represented.

A very large addition to the nursery recently made is planted with fruit, whilst old quarters are now carrying diverse crops for a year or two, then they will be cropped with fruit again. It is this care in rotative cropping, the excellence of the soil, the open sunny aspect, and the striking care evidenced in cultivation, that enables the firm to present such a remarkable stock of trees and bushes as is to be seen at Allington just now. The entire process of tree formation, from the insertion of the bud, so recently done, or of the graft in the spring, to the development of the fine tree or bush in luxuriant fruit, is an object-lesson to be appreciated, as well as evidence of the cultivator's skill. In other directions may be seen pot Vines in great quantities, and Figs in pots ready for sale. Visitor.



FIG. 116.—PEAR DOYENNÉ DU COMICE.

standard, dwarf, trained, bush, or other trees or fruits, they will be astonished at the productive capacities of soil there revealed. Generally, the Allington Nurseries are under fruit-trees. Probably the proportion so planted is three-fourths; but the remainder is to the utmost utilised with Roses in tens of thousands, standards, dwarfs, and climbing varieties; by Rhododendrons, that thrive almost luxuriously in the sandy loam, and give hard growth and mats of roots of the best quality. Azaleas also do well, and indeed so do all descriptions of shrubs, trees, hardy plants, and practically everything pertaining to a great nursery.

One of the first breadths that attract notice when entering the nurseries from Barming station is a huge mass of the new Boskoop Giant Black Currant. The growth and leafage of this variety stand out in marked contrast to that of older varieties adjoining. The entire batch is two years from the cutting, and there is not a single "big bud" over the whole mass. Boskoop Giant bids fair to become the most valuable variety of Black

like standards that are carrying immense crops of fruits; notably so are Cox's Orange Pippin, Gascoyne's Scarlet Seedling, Baumann's Red Reinette, Bismarck, Bramley's Seedling, Royal Jubilee, Lord Derby on a Paradise Stock as a standard, Newton Wonder, and others, especially Christmas Pearmain, so loaded that it is marvellous any one tree can perfect such a load of handsome fruits.

In another direction are many younger standards in great variety, planted thinly to show form and pruning, such as should be found in high-class orchard Apple culture. But the chief object of interest was a great breadth of bush Apple-trees some 10 years old, and planted 9 feet by 9 feet each way. Here was an object-lesson in Apple culture such as all who would embark in it as a vocation should see—hundreds of trees carrying crops, forming striking pictures. Of desserts, the new James Grieve (really an early Cox's), Allington Pippin, Cox's Orange Pippin, Adam's Pearmain, Calville Rouge Precocé, and the late variety Fallawater, new and very

"THE FRUITERER'S SECRETS."

EXACTLY 300 years ago a tract of seven pages was presented for sale to the English public with title as above. It gave in concise form, yet with commendable fulness, the methods that experience had proved best for gathering, packing, carrying, and storing the fruits commonly cultivated in England. When compared with the short notes on these subjects that appear in *The New Orchard* and in Markham's edition of *The Countrie Farme*, this little pamphlet must be regarded as being by far the best treatise on the subject that appeared for a long series of years. Judging by the space devoted to Cherries, Pears, and Apples, these would seem to have been the most important fruits, Medlars and Quinces next, and Apricots, Peaches, Plums, Damsons, and Bullaces the least important. Wardens always were treated as a distinct kind of fruit, and Pippins in the same way distinct from Apples generally.

Pears were to be gathered "for expence [home use], for transportation, or to sell to the Apothecarie." For the first purpose the fruit was to be half ripened at time of gathering, for transportation, the condition of the core and kernels was to be taken as a guide.

Winter Apples were to be gathered on "a faire sunny and dry day in the wayne of the moone and no winde in the East." Care was to be exercised not to take off "Bruns" (spurs), and to secure the fruit with unbroken stalks; "and it is not good by any meanes to beat downe fruit with Poales."

Green Fern was recommended for packing material, "and the Ferne doth not onely keepe them from bruising, but also ripens them, especially Pears"; and it was advised in order to hasten ripening to lay the fruit in heaps upon Ferne, covering them with the same, and uncovering them when nearly ripe, and ying the fruit thinly out to keep as long as possible."

Winter fruit, Apples and Pears, were to be stored in a "lowe room or celler that is sweet and either boarded or paved and not too close, is good from Christmas till March; and roomes that are seeled overhead, and from the ground, are good from March till May; then the celler againe from May till Michaelmas." These long-keeping Apples "which will last all the year" were "Pippin's Apple-Johns, Pearmanes, and Winter Russetings." Those who feel dismay at late-keeping fruit shrivelling may be comforted by this statement—"All lasting fruit after the middest of May begin to wither—they must needes wither and bee smaller."

Hard fruit for transportation was packed in baskets or maunds lined with Fern; but for a distance by water then hogheads or barrels were recommended, the tops and bottoms to be lined with sweet straw, and each fruit to be packed singly by hand, "that no empty place be left." March, when the wind blows bitterly, is an unsuitable month to transport fruit, so also frosty weather, and the extreme heat of summer.

The writer of this treatise, as well as other early authorities, believed in "turning" the fruit at regular intervals of time—a week previous to Christmas, next at Shrovetide, and after that once a month till Whitsuntide, then once a fortnight; each time giving the fruit more room, and on occasions when it was found to have contracted moisture the windows and doors were to be set open during certain hours of the day.

Cherries, of which four kinds are mentioned, when gathered, were put in a cherry-pot or "Kybzey hanging by your side." In the case of Apricots, &c., Nettles are recommended to be laid under and above the fruits as an aid to full maturity.

Medlars were not to be gathered until they had been "touched with frost." They were to be stored in some receptacle, "wrapped about with woollen cloths under, over, and on all sides,

and also some weight laid upon them." Quinces were to be treated in the same manner, these precautions being taken in order to heat, and by that means ripen up the fruits. Of course there are many details in addition to the above, but these give an idea of the methods pursued by a man who apparently was well acquainted with hardy fruit culture as practised in 1604. B.

FLORISTS' FLOWERS.

FUCHSIAS WITH WHITE COROLLAS.

I THINK I can add something to the history of this class of Fuchsia beyond that given by "A. D." (*ante*, p. 221) and G. T. Grignan (p. 243). My father's library was a very limited one, but among the gardening publications he took in was Harrison's *Floricultural Cabinet*; and I well remember our surprise at the appearance of coloured figures (in July, 1855) of the varieties Mrs. Story and Queen Victoria—I give them in the order in which they were published. But this, if we can accept title-page dates, was not the first publication. In the February number of the *Florist, Fruitist, and Garden Miscellany* for 1855 is a much better representation of Queen Victoria, associated with a figure of Prince Albert, a beautiful variety having a crimson calyx and a purple corolla.

So far as my researches go—and I am fairly well acquainted with the literature concerning the genus Fuchsia—both of these English records appeared before any in Continental publications. The figures referred to in the *Flore des Serres* have the appearance of having been made up from the English ones, and in the text only the firms of Henderson and Lucombe and Pince are mentioned in this connection. It is true that the date of the volume in question of the *Flore des Serres* is given as 1854—1855, but on p. 16 there is a reference to the *Bon Jardinier* of 1855.

Consulting other continental horticultural periodicals of that date, I find in *L'Horticulteur Français* for 1855, p. 189, a humorous account of the advent of "Queen Victoria," "nouveau gain Anglais," adding "que Queen Victoria soit cependant le bienvenu [?]; mais nous ne pouvons faire semblable accueil à Mistress Story," &c.

The *Journal de la Société Impériale et Centrale d'Horticulture* (Paris) for 1855, p. 195, records this "charmante variété" from the February number of the *Florist and Fruitist*. In the *Floricultural Cabinet* for 1856, p. 79, is a descriptive list of the English varieties of Fuchsia having a white corolla.

Mr. Grignan says (*loc. sup. cit.*), "It appears, however, that Fuchsias with white corollas were already numerous at that time in France, for I read in the *Revue Horticole* for 1856, p. 435, that at the exhibition of Laval, M. Georget exhibited a collection of Fuchsias with white corollas, which included sixty good and choice varieties." This is a correct translation, as I am able to verify; but I think we may venture to assume from contemporary literature, that the writer meant the whole collection of Fuchsias in the group numbered sixty varieties.

This view is supported by the records of the late Felix Porcher in the various editions of his *Histoire et Culture du Fuchsia*. This little work, of which I possess the fourth and last edition (published in 1874, and presented by the author, then in his seventy-seventh year), is a most valuable compilation. It consists of about 150 pages, and is full of interesting particulars relating to the subject.

Concerning Fuchsias with a white corolla, he says: "Une race très intéressante, que les semeurs anglais ont obtenue et que les horticulteurs français, belges et allemands ont améliorée et perfectionnée." Discussing the successive varie-

ties of this class, he says it was in the years 1860 and 1861 that Belgium produced two varieties which were far superior to any previously sent out. They were Madame Cornelissen and Marie Cornelissen, which, he adds, were for many years valuable market plants. W. Botling Hemsley.

VEGETABLES.

POTATO "UP-TO-DATE."

ON Sept. 22 I lifted over a ton of Potato-tubers from a plot of ground measuring 24 yards long by 10 yards wide. The ground has not been afforded any manure during the last two years. I consider "Up-to-Date" to be the very best all-round Potato grown. It requires a piece of ground that has been well prepared by good honest digging. Out of the ton of tubers mentioned above, there were 10 stones suitable for seed purposes and 8 stones of small waste, the remaining tubers being of fine quality and appearance. H. Green, Nocton Hall Gardens, Lincoln.

SOCIETIES.

HORTICULTURAL CLUB.

HIMALAYAN PRIMULAS.

OCTOBER 4.—The Horticultural Club resumed its monthly dinners at the Hotel Windsor, on the above date, when Sir John Llewelyn, Bart., took the chair at the head of a good attendance of members and guests, among the latter being Sir Daniel Morris, and Mr. F. Moore of Glasnevin, while the guest of the evening was Sir George Watt, K.C.S.I., who gave decidedly one of the most learned papers among the many with which the Club has been favoured. The subject was "Himalayan Primulas," a genus with regard to which Sir G. Watt is one of our greatest authorities, especially as his extensive knowledge is based on active personal research in the highlands of India, and the numerous dried examples which he exhibited have been collected by himself often under most arduous and difficult conditions. In his opinion the Primula genus has so far been by no means adequately classified, certain distinctive characters in the veneration of different species being largely lost sight of in the dried herbarium specimens which form the chief basis of classification. The genus falls, in his opinion, into three great groups with respectively revolute, convolute and conduplicate veneration, and these three persist throughout large areas. Species are also greatly modified in form by difference of elevation, and apart from this it was extremely interesting to note the immense differences in size, shape, and habit of both foliage and flowers, which characterise this one genus in its numerous species.

The paper which Sir GEO. WATT referred to rather than read not only gives a practically exhaustive list of Indian Primulas, accompanied by copious notes on their peculiarities and localities, but also appeals to the practical cultivator by its clear description of the soil, conditions and general environment under which the species thrive best. It is therefore a matter for congratulation that this valuable paper has been kindly handed over by Sir GEO. WATT for publication in the *Royal Horticultural Society's Journal*, since, as in the subsequent discussion was pointed out by Mr. F. MOORE, the paper differed in this respect from many botanical ones, which too often were mere dry lists, affording little information to the grower, as they treated solely of the more or less salient distinctive characters of the plants concerned, without any of those illuminating suggestions which an accompanying description of their environment affords as a guide to cultivation. It may be mentioned that all the Primula family as represented in India are practically subaquatic—i.e., they are most at home in very wet situations, or by stream-sides. In the Himalayas they appear to thrive in wet sandy deposits, even glacial, an abundance of soil moisture being evidently one of their chief requirements. With the usual adaptability of plants however, in the absence of these conditions, some species do well in shady Pine-woods, where the soil is protected from evaporation by the shade and a constant coating of dead vegetable matter. As Mr. Moore pointed out, such a paper was a model for those who aim at bringing about the much-to-be-desired co-operation of the botanist and the gardener, the former giving the latter the benefit of his more extended knowledge, obtained by actual visits to the

habitats of the plants concerned. Sir John Llewelyn coupled with the hearty vote of thanks of the Club to Sir George Watt some interesting remarks with regard to his own experience with Indian Primulas, and the obvious value of the study of natural habitats from a practical point of view.

An additional practical point was urged by Sir Geo. Watt in connection with hybridisation, which he contended could be pursued to better advantage if proper classification indicated affinities which would help or divergences which would hinder conjunction.

NATIONAL CHRYSANTHEMUM.

OCTOBER 5, 6.—The early autumn exhibition of this Society was held at the Crystal Palace in fine though dull weather. The attendance was not numerous on the opening day, being influenced probably by the counter-attraction of the Fruit Show at the Horticultural Hall. The season at present is too early to expect any great attainments in these truly autumn flowers, still these early shows serve the useful purpose of encouraging the development of the earlier-flowering types, thus lengthening the season for this popular flower. Many good flowers were seen in the competitive classes, the show being enhanced by some excellent non-competitive groups, including commendable collections of hardy fruits.

OPEN CLASSES.

For twenty-four Blooms of Japanese varieties, not fewer than eighteen varieties, there were five entries. J. WARREN, Esq., Capel House, Waltham Cross (gr., Mr. W. Ring), was 1st with Marquis V. Venosta, Madame G. Herrewége, F. S. Vallis, President Viger, Mermaid, Mafeking Hero, Bessie Godfrey, Mrs. H. Emmerson, General Hutton, Miss Olive Miller, Bronze S. d'Octobre, René, Ethel Fitzroy, Mrs. J. C. Neville (good bloom), Mrs. J. Thorneycroft, Elsie Fulton (excellent), Mrs. R. Darby, and Mrs. Coombs. W. J. NEWMAN, Esq., Totteridge Park, Totteridge (gr., Mr. Jas. Brooks), was 2nd. H. L. BISCHOFFSHEIM, Esq., Stanmore, 3rd.

For twelve Blooms of Japanese, distinct, J. WARREN, Esq., again secured the premier place with Mafeking Hero (good bloom), Mrs. H. Emmerson, Mermaid, Marquis V. Venosta, Elsie Fulton, President Viger, General Hutton, Mrs. H. Weeks, Miss Olive Miller, Bessie Godfrey, Madame G. Herrewége, and Henry Perkins. W. T. NEWMAN, Esq., was again 2nd, and the Hon. W. F. D. SMITH, M.P., Henley-on-Thames (gr., Mr. H. Perkins), 3rd, whose exhibit included a handsome flower of Mrs. A. Acland.

Class 4, for six distinct Japanese, brought only three entries. H. H. PLATTEN, Esq., Harwood Hall, Upminster, Essex, winning easily, Edith Shrimpton, Mrs. G. Mileham, and Mrs. T. W. Poekett, being well shown well. 2nd, Mrs. J. LYON, Riddings Court, Caterham Valley (gr., Mr. Halsey). 3rd, Messrs. SALTMARSH & SON, Chelmsford.

Twelve bunches of early-flowering Pompons brought only two poor exhibits, those from Mr. ERIC SUCH, Maidenhead, and Mr. D. B. CRANE, Highgate, who took 1st and 2nd prizes respectively.

Class 6, for two vases of twelve Blooms of large-flowering varieties in each vase, arranged with suitable foliage, brought some excellent exhibits. The 1st prize vases contained some good flowers with the colours well balanced. W. J. NEWMAN, Esq., was 1st, and F. D. LAMBERT, Esq., Moor Hall, Cookham (gr., Mr. Fulford), 2nd.

Twelve Bunches, distinct varieties, from plants grown in the open, and not disbudded.—Two exhibitors competed. Mr. D. B. CRANE, Archway Road, Highgate, was awarded 1st prize with Horace Martin (good bright yellow), Rocket, Mrs. Chas. Curtis (pleasing with a good yellow eye), Improved M. Masse, Carrie (excellent), Eleanor, &c.; and Mr. ERIC SUCH, Maidenhead, was 2nd.

AMATEUR'S CLASSES.

For twelve blooms of Japanese, there were but two entries, those from W. BEECH, Esq., North Ockendon, Romford (gr., Mr. M. Rayment), and D. LINK, Esq., Fairlight, Beckenham (gr., Mr. W. Trowell), who were 1st and 2nd respectively. The 1st prize collection contained good flowers of Alice Byron, Lady Crawshaw, and E. Bettsworth. The variety Florence Molyneux was shown well by Mr. LINK.

The class for six bunches of distinct varieties grown in the open, not disbudded, brought three entries. W. J. NEWMAN, Esq., was 1st with Goacher's Crimson, Horace Martin, Robbie Burns, &c. 2nd, Mr. CRANE. Mr. NEWMAN also secured 1st for best vase of early-flowering Pompons with suitable foliage.

Class 22 was for one vase of five Japanese blooms other than white or yellow. There were three entries, Mrs. JEREMIAH LYON, Riddings Court, Caterham Valley (gr. Mr. G. Halsey), being an easy 1st with five excellent flowers of Mrs. G. Mileham. 2nd, W. BEECH, Esq., Romford (gr. Mr. M. Rayment), with the same variety.

For one vase of five white Japanese blooms four competed. Miss Alice Byron, exhibited by W. BEECH, Esq., Romford (gr., Mr. Rayment), won easily. These flowers were especially meritorious. 2nd, J. WARREN, Esq., with the variety Mermaid.

Mr. J. B. CRANE was 1st for twelve bunches of early-flowering Pompons.

For six Blooms of Japanese in Class 29, A. F. BLADES, Esq., Rookfields, Reigate (gr., Mr. F. Cordell), was 1st with flowers of large size, rather lacking in quality.

In Class 30, for a similar exhibit (no gardener allowed), Mr. W. H. CHALK, 224, High Street, Slough, was the only exhibitor with some commendable flowers, that of the Hon. Mrs. Acland being specially meritorious.

AWARDS.

Certificates were awarded to the following varieties:

Chrysanthemum "Miss Mona Davis."—Rather coarse, reflexed Japanese; colour creamy-white.

C. "Miss Lucie Devan."—Small incurved Japanese, recommended for market purposes; a good white variety. The two above exhibited by Mr. NORMAN DAVIS, Framfield, Sussex.

C. "Arthur du Cros."—Purplish rose, with silvery reverse; reflexed Japanese. Exhibited by ARTHUR DU CROS, Esq., Canons Park, Edgware (gr., Mr. Bullimore).

C. "Viola."—Large-flowered Japanese reflexed; very light lilac colour with rose-coloured margins. Shown by Mr. M. SILSBURY, Providence, Isle of Wight.

C. "Winnie."—Deep yellow-coloured decorative variety. Flowers small, but of good quality. Exhibited as a pot-plant. From Messrs. CANNELL & SONS.

DECORATIVE CLASSES.

Miss FAIRWEATHER, Bifrons, Canterbury, won the prize for the best decorated dinner-table; the arrangement was light, over a rich satin table-centre. Mrs. F. L. BREWSTER, 12, St. Peter's, Canterbury, was 2nd.

Miss COLE, The Vineyard, Feltham, was awarded 1st prize for three epergnes of Chrysanthemums; yellow and bronze varieties were used with autumn-coloured foliage. Mr. D. B. CRANE, Highgate, 2nd.

Miss C. B. COLE had the best basket of Chrysanthemums in Class 24. Several other pretty designs were submitted by other competitors. Miss COLE's arrangement of a basket of garden flowers from the open was also successful in Class 25, Cactus Dahlias and autumn foliage being arranged with good effect.

For a basket of Roses Mr. ERIC F. SUCH secured premier honours; while the best basket of autumn foliage and berries was shown by Mrs. F. L. BREWSTER, 12, St. Peter's, Canterbury. Honesty, Privet-berries, Clematis vitalba fruit, Snowberry, Braeken, &c., being very artistically arranged.

Four entries for the vase of Chrysanthemums suitable for table decorations resulted in one from W. J. NEWMAN, Esq., gaining 1st prize. The blooms were far superior to the others competing.

Mrs. A. TAYLOR, 5, Vernon Terrace, East Finchley, had the best epergne of Chrysanthemums in Class 31.

MISCELLANEOUS GROUPS.

HOBBIES, Ltd., Dereham, set up an artistic display of Roses, Clematis, Chrysanthemums, Cactus Dahlias, &c. (Gold Medal).

Messrs. CANNELL & SONS, Swanley, had a choice group of Cannas, edged with Cactus Dahlias and Maidenhair Ferns; also a number of plants of Kochia scoparia (Silver-gilt Medal).

Mr. ERIC F. SUCH, Maidenhead, had a large mixed group of cut blooms in vases, Chrysanthemums, perennial Asters, Physalis, Pyrethrums, &c. (Gold Medal).

Mr. H. J. JONES, Lewisham, had a highly meritorious collection of Chrysanthemums in tall vases, exhibition boxes, &c., also a choice collection of perennial Asters. Very handsome group (Gold Medal).

Messrs. T. S. WARE, Ltd., Feltham, also set up an artistic collection, principally of Cactus Dahlias, Asters, tuberous-rooting Begonias, &c. Highly decorative group (Gold Medal).

Mr. DAVID RUSSELL, Brentwood, brought a collection of Apples, also Asters and Mushroom spawn (Silver Medal).

Fruit was also contributed by Messrs. J. CHEAL & Sons, Crawley, with vases of Dahlias, Asters, &c. (Silver-gilt Medal).

Mr. H. BERWICK, The Nurseries, Sidmouth, Devon, had an excellent collection of Pears and Apples (Gold Medal).

Messrs. PEED & SON, West Norwood, London, obtained a Silver-gilt Medal for Apples and Pears.

Mr. A. L. GWILLIM, Cambria Nursery, New Eltham, Kent, set up several stands of tuberous-rooting Begonias (Silver-gilt Medal).

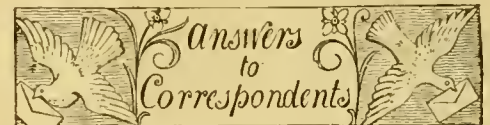
GARDENERS' DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS'.—The first meeting of the session was held on October 3, the President, Mr. Leonard Sutton, presiding over an attendance of nearly 100 members. The subject for the evening was "Dahlias and their Culture," and the paper and the discussion were of a very practical character, as Mr. H. Shoesmith, of Woking, was the gentleman selected to introduce the subject. Many questions were asked with regard to culture and varieties for various purposes; the chief interest was centred in the Cactus section. Those taking part in the debate were Messrs. Barnes, Neve, Wilson, Powell, Harris, Judd, Alexander, Bassel, &c. The exhibits included some fine bulbs of Ailsa Craig Onion, averaging from 2½ lb. to 2 lb. 14 oz. each, staged by Mr. J. A. Hall, Shiplake Court Gardens; double and single Begonia blooms of large size and varied colour, picked from the open, from Mr. E. S. Pigg, Fernbank Gardens, Ropley, Hants; and some splendid tubers of Up-to-Date Potato, averaging 1½ lb. each, from Mr. T. Judd, Hatchgate Gardens, and Mr. F. Alexander, St. Mary's Hill Gardens. Seven new members were elected.

SCHEDULES RECEIVED.

ANCIENT SOCIETY OF YORK FLORISTS' EXHIBITION of Chrysanthemums, Plants, &c., in the Exhibition, York, on November 16, 17, and 18, 1904. Secretary: Mr. George F. W. Oman, 38, Petergate, York.

SHEFFIELD CHRYSANTHEMUM SOCIETY'S ANNUAL SHOW on Friday and Saturday, November 11 and 12, 1904, in the Corn Exchange, Sheffield. Secretary: Mr. M. H. Willford, 35, Carfield Avenue, Meersbrook, Sheffield.



ALLAMANDAS: H. B. Seedlings all good, but not better than we have already. We have no means of knowing whether there are differences in habit.

APPLE SEEDLING: E. J. A. Your Apple is exactly like "Tower of Glamis." It shows no improvement upon this variety. We should say it is a first-rate cooker and beautiful in appearance. It has not, however, the appearance or flavour of Ribston Pippin in the least degree.

CATERPILLARS ON CURRANT BUSHES: D. D. S. The caterpillars are those of the Magpie moth, *Abraxas grossulariata*. They pass the winter on the infested bushes or upon the ground among the leaves, or anything that will give them shelter, and as soon as spring returns they will reappear when the buds begin to burst. You should at once apply Paris-green at the rate of 2 oz. to 20 gallons of water, and repeat the dose in spring, doubling the quantity of water. Caution—the solution must be used with great care as it is highly poisonous, and the water kept constantly agitated. It is important also that all dead leaves should be collected directly they have fallen, and at the same time any that may have lodged among the branches should be removed. Treat prunings in the same way, and dig between the bushes as soon as practicable.

CUCUMBER-LEAVES: Minus a Microscope. Your Cucumber-leaves are not affected with *Cero-sporea melonis*, as you imagine, but appear to be suffering from the effects of too much fire-heat and a deficiency of atmospheric moisture. Red-spider and thrip are present on the specimens you send us. The incorporation of suitable manure with the loam should have produced a beneficial effect rather than otherwise.

CUSCUTA (DODDER) ON PELARGONIUM: T. & Sons. Not uncommon. It was probably introduced with the peat used for potting.

DOG-ROSE: F. & S. Sow the seeds during autumn.

MILLER'S "GARDENING DICTIONARY": A. L. We are afraid you will not obtain much for this, but you might advertise the work for sale. The first and eighth editions are those of most value.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money; and cannot be

allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—*Mr. Kups.* Apple Benoni.—*Hexham.* 1, Italian Prune; 2, Guthrie's Late Gage.—*E. B.* 1, Barchard's Seedling; 2, Norfolk Beefing; 3, Kitchen Reinette; 4, Domino; 5, Galloway Pippin.—*E. R.* Beauty of Kent.—*A. J.* 1, Atkins' Seedling; 2, Irish Peach.—*W. P.* 1, Roundway's Magnum Bonum; 2, Tower of Glamis; 3, Dredge's Fame; 4, Robinson's Pearmain; 5, not recognised.—*H. F.* 1, Prince Albert; 2, New Hawthornden; 3, Sturmer Pippin; 4, Lady Henniker; 5, Bismarck; 6, Stirling Castle.—*J. H.* 1, Hesse; 2, Beurré d'Amanlis.—*J. C. G.* 1, Mank's Codlin; 2, Red Astrachan; 3, Duchess of Oldenburgh; 4, Devonshire Quarrenden; 5, Lady Derby; 6, Worcester Pearmain; Pear Colmar d'Été.—*James Burton.* 1, Scarlet Pearmain; 2, not recognised; 3, Ross Nonpareil.—*Headley Park.* 1, Annie Elizabeth; 2, Newton Wonder; 3, King of the Pippins; 4, Warner's King; 5, Bismarck; 6, Beauty of Bants.—*A. R.* 1, Margil; 2, Waltham Abbey; 3, St. Lawrence; 4, Fearn's Pippin; 5, not recognised; 6, Norfolk Beefing.—*J. G.* Lady Derby.—*G. B.* 1, Cox's Orange Pippin; 2, Franklin's Pippin; 3, Beauty of Kent; 4, Hambledon's Deux Ans; 5, Duchesse d'Angoulême; 6, Japanese Pear. We have grown several dozens of these fruits, but have always found them of poor flavour and useless.—*Ajax.* 1, Flower of Kent; 2, Blenheim Orange; 3, Warner's King; 4, Wealthy; 5, Autumn Compôte; 6, Jefferson.—*J. J.* 1, Ribston Pippin; 2, Belle de Boskoop; 3, Hollandbury; 4, The Queen; 5, Sturmer.—*A. G. R.* 1, Warner's King; 2, not recognised, but possesses excellent flavour; 3, Crimson Queening. Plums; 1, Kirks's; 5, Oullin's Gage; 6, not recognised. Plums should never be packed with Apples.—*T. B. A.* 1, Ecklinville; 2, Niton House; 3, King of the Pippins; 4, Cox's Orange; 5, Small's Admirable; 6, Pott's Seedling.—*J. H. C.* 1, too small to name; 2, Beurré Diel; 3, Fondante d'Automne; 4, King of the Pippins; 5, Peach Princess of Wales.—*W. H. B.* 1 and 5, The Queen; 2, Newton Wonder; 3, Reinette du Canada; 4, Sandringham; 5, Gratioli of Jersey.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*E. R.* 1, Cephalotaxus Fortunei; 2, Cupressus sempervirens; 3, Polygonum cuspidatum; 4, Myrica gale; 5, Cupressus pisifera var. argentea; 6, Cupressus obtusa nana; 7, Picea excelsa var. pygmaea.—*J. F. G.* Euonymus europæus.—*J. M.* Your specimen was shattered; probably Liliun tigrinum.—*E. A. Burbidge.* 1, Ruella Portellæ; 2, Dracæna Godseffiana; 3, probably Mimulus glutinosus, send when in flower; 4, Aster Amellus; 5, Hibiscus syriacus.—*Mr. G. K.* Berberis vulgaris.—*F. C. A.* Clerodendron Bungei.—*A. W. C.* 1, Cupressus Lawsoniana; 2 and 3, Retinospora (Cupressus) obtusa; 4, Retinospora pisifera var. plumosa; 5, Abies grandis; 6, Thuja gigantea (T. Lobbi of gardens). Transplant the Choisyaternata at about the end of this month.—*A. F.* 1, Akebia quinata; 2, Actinidia sp. [?]; 3, Pentstemon barbatus; 4, Periploca græca; 5, Cotoneaster microphylla.—*G. H. H.* 1, Cupressus sempervirens; 2, Cupressus Lawsoniana; 3, Cupressus sempervirens; 4, Thuja gigantea; 5, Polygonum Sieboldi; 6, Ligustrum lucidum.—*J. E. C.* 1, Phytolacca decandra; 2, the cut-leaved Lime, a variety of Tilia europæa.—*Gardener.* 1, Cupressus, probably sempervirens, but without cones it is impossible to determine the species; 2, Cotoneaster frigida.—*A. G. M.* Miltoia × Binotii, natural hybrid of M. candida and M. Regnelli purpurea.—*J. M., Hull.* Pteris crenata, often called Pteris chinensis.—*Claremont.* Miltoia Cogniauxia, natural hybrid between M. Regnelli and M. spectabilis Moreliana.—

J. B. Nerine Fothergillii.—*A. Y. L., Leicester.* 1, Dracæna ferrea; 2, D. variabilis.—*F. N.* Amaryllis Belladonna, Cupressus funebris, and Adiantum sp.—*A. R. T.* 1, Pleurothallis ornata; 2, Stelis ophioglossoides; 3, Disa racemosa; 4, Satyrium carneum; 5, Disa sagittalis; 6, Cyrtanthus parviflorus.—*T. J. R. C.* Leonotis Leonurus.—*A. W.* 1, Saponaria officinalis; 2, 3, garden varieties of Helenium autumnale; 4, Centaurea montana rosea; 5, a Celsia or a Verbascum, but the flowers had all fallen; 6, Sidalcea malvæflora.—*T. W. P.* 1, Corylus colurna; 3, Pyrethrum uliginosum; 2, Quercus pedunculata.—*C. C.* Helenium autumnale var. striatum.—**SPECIMENS PACKED IN A WOODBINE BOX:** *Anonymous.* 1, Quercus pedunculata; 2, Q. sessiliflora; 3, Spiræa Menziesii (probably); 4, S. tomentosa; 5, Cupressus Lawsoniana; 6, Libocedrus decurrens.

NOTICE TO QUIT: *A. H. W.* The usual practice is to give and accept one month's notice. We do not know if you could recover the wages for one month in a court of law; much would depend upon the circumstances connected with your appointment. Consult a solicitor.

PACKING PLANTS TO GO TO SOUTH AFRICA: *B. R.* Assuming that a general collection of plants is to be sent, the following methods will be found to answer:—In the first place it should be remembered that in all cases where practicable seeds are the simplest and often the best means of transporting plants. In packing plants for such a purpose as you describe, everything should be so packed that any movement within the case during transit should be made impossible. All bulbous and tuberous plants should be dried off, and packed with buckwheat husks in a wooden box. Alpine or herbaceous plants should have the roots balled-up in fairly wet packing-moss; then wrap each plant in a piece of strong brown-paper, leaving the top open where there is any growths; then pack in hampers between layers of packing-shavings. Hardy trees and shrubs and fruit-trees should be lifted when at rest, removing as much growth as possible; the smaller plants should be balled-up in wet moss and packed in wooden cases. Place a single layer of plants at each end of the box, then a good layer of wet moss, and a batten to keep the plants in position; continue this process until the box is filled, the tops of the plants occupying the centre of the box. The wooden battens should be fixed with nails from the outside. This method is also used for packing greenhouse plants and cool Orchids. Large specimens of trees and shrubs should be packed in "bundles"; an expert from a nursery would be required to accomplish the work successfully. Cacti, or other plants of a like nature, may be shaken out of their pots, the roots wrapped in damp moss, and the plants packed between layers of dry shavings in a box. Choice stove plants or East Indian Orchids would require a Wardian case, in reference to which it would be best to consult a nurseryman who is in the habit of sending plants abroad, from whom you will be able to obtain the packing materials required. Wardian cases should be plainly labelled, "On deck under awning"; but all boxes and bundles, "In cool dry part of hold." Shipping agents for South Africa are Donald Currie & Co., 3 and 4, Fenchurch Street, E.C., with whom it would be necessary to correspond previous to forwarding goods.

PEAR LEAF CLUSTER CUPS: *W. T.* Your tree is affected with a fungus—Roestelia lacerata. One generation in the life cycle of this disease occurs on the Juniper. Abolish one of the host plants and the mischief ends. When it is desirable to retain both host trees, then spare no trouble in discovering the Juniper producing the mischief—the gelatinous orange-coloured masses being conspicuous in the spring—and cut out the branches affected. If it is not desirable to cut out the diseased portion, wash the bark with a strong solution of sulphate of copper or corrosive sublimate. Keep a strict watch on the branches each spring, otherwise the mycelium present in the branch might extend and produce fruit beyond the portion treated. Burn the affected leaves of the Pear-tree as far as possible.

PELAGONIUMS: *F. N.* The cuttings were too "sappy," and planted too deep, hence they have become the prey of fungus and have rotted off.

POTATO DISEASE: *D. B. T.* Your tubers are badly affected with the Black Scab or "Warty Disease" (Edomyces leproides). Burn all diseased tubers. Gas-lime kills the fungus in the soil if worked in about May or June. At other seasons of the year gas-lime is of no value in this respect. Experiments prove that powdered sulphur mixed in the soil will protect the sets from this disease. See illustrated article in the *Gardeners' Chronicle*, April 23, 1904, pp. 257, 259.

ROSE: "*Docter.*" The Red rust is a species of fungus, Phragmidium. Burn the affected leaves. Spray with weak Bordeaux-mixture next year. The stock appears to be one of the American species, like R. cinnamomea. We are not aware that it is used in this country.

ROSES: *L. McG.* We cannot tell unless specimens are sent us.

STRAWBERRY: *H. N.* In the absence of any information we cannot tell the cause of death. The leaves are attacked with the fungus so common on Strawberry-leaves, but this fungus does not usually kill the plant.

VINERIES: *Y. Sch. F. L.* It is difficult for us to determine the cause of your Grapes failing, as we do not know all the conditions under which the Vines are growing, but from your letter we believe the fault is with the borders. The presence of aerial roots indicates a want of proper action on the part of the true roots. They are a sign of bad health, and are frequently the precursors of shanking. They result mainly from the effects of the roots being in a cold wet border. Excessive defoliation at one time is bad for the Vines; it causes a severe check to the plants, and anything of such a nature may produce shanking. But this condition, of which your bunches show unmistakable signs, is also very frequently the result of the roots getting into a cold subsoil. We do not advise very severe treatment to the old roots, but by bringing them nearer to the surface, and affording them some rich porous compost, they may be induced to make a quantity of fibrous growths. We think your conclusions are in the main reasonable.

WATER FOR KITCHEN GARDEN: *One who Wishes to Know.* You want to know what quantity of water would be required to keep the vegetable crops in a 5-acre walled-in kitchen-garden, as well as the trees growing against nearly 1000 ft. run of a 16 feet high wall, together with the occupants of sundry plant, fruit-houses, and pits (the number and dimensions of which are not stated) in a healthy growing condition during April and the five following months, the water to be distributed through a hose. This is a difficult question to answer, seeing that we have no information as to the nature and depth of the kitchen-garden soil, whether stiff, medium, or light in texture, deep or shallow; neither is it stated whether the subsoil consists of clay, gravel, chalk, or limestone. However, roughly we should estimate the quantity of water required in ordinary seasons during the six months indicated at from 150,000 to 200,000 gallons more or less according to special circumstances and the discretion exercised in the use and application of the water by those having to do with its distribution.

COMMUNICATIONS RECEIVED.—*H. B.*—*G. D. M.*—*C. S. F.* *R. Soc.*, Toscana—*C. S.*, Naples—*F. M. G.*—*J. R.*—*E. G.*—*W. P. W.*—*T. S.*—*F. C. K.*, N. S. Wales—*G. N.*, Florida—*Viger*—*J. H. V.*—*G. P.*—*J. D.*—*W. M.*—*F. A. P.* *D. R. N.*—*C. S. F.*—*W. S.*, Mersina.—*L. Gentil*—*A. B.*—*C. S.*—*H. W.*—*S. T.*—*F. P.*—*J. C.*—*W. H. L.*—*G. H. L.*—*Old Reader*—*C. C. R.*—*C. G.*—*J. S. C.*—*W. Earp.*—*T. W. B.*—*H. F.*—*J. C.*—*R. H.*—*W. J. P.*—*Shrives.*—*R. T. P.*—*Nairn*—*W. F. B.*—*H. A.*—*J. H. D.*—*W. Collins.*—*A. D.* Webster—*Selsdon*—*F. C. G.*—*E. M.*—*Expert.*—*F. H. M.*—*J. B.*—*G. B. M.*

EXHIBITION OF BRITISH-GROWN FRUITS AT THE ROYAL HORTICULTURAL HALL, VINCENT SQUARE.

(OCTOBER 4, 5, 6, 1904.)

AN Annual Exhibition of British-grown Fruits was held for some years by the Royal Horticultural Society at the Crystal Palace. The last display, however, took place in 1903 in the famous gardens at Chiswick, which are now but a memory. Thanks to the new Hall in Vincent Square, the exhibition was this year held in the heart of London. The capacities of the building were tested more severely than they have hitherto been, and all the space available for exhibits was pressed into the service, including a room upstairs and another downstairs. This arrangement, though the best that could be made under the circumstances, was not entirely satisfactory. The inconvenience would have been lessened if notices had been placed about the Hall directing the attention of visitors to the fact that additional exhibits could be seen in the supplementary rooms. It is to be feared that, as this was not done on the opening day, many failed to see anything of what may be described as the overflow show.

The exhibition generally was excellent. We all expected to see a splendid array of Apples, and we were not disappointed. Pears, too, were satisfactory, even if less remarkable than the Apples. The collections of indoor fruits left little to be desired, and the Grapes exhibited in the special classes were of satisfactory merit. It was, however, regrettable that no exhibits were made in the two most important classes of those arranged exclusively for Grapes.

The show tickets at the Royal Horticultural Society's exhibitions usually leave no room for criticism; but on this occasion they were less informing than usual. The average visitor wants to know as precisely as he may where particular exhibits have been grown. Therefore we think that it is not sufficient to indicate that "Three bunches of Grapes," or "Fifty dishes of Apples," were exhibited by Lord A., of Maidstone, or Lord O., Edinburgh; but that the name of the place, "Elvaston," or "Barham Court," should also have been given. Neither was there any description of the nature of each class attached to these show tickets, as there has been on former occasions.

THE FRUIT AND VEGETABLE COMMITTEE alone of the Royal Horticultural Society's departments sat for the inspection of novelties, and, as will be seen below, this body recommended Awards of Merit in four instances.

It should be remembered that such an exhibition causes a great deal of extra work to the Secretaries, to Mr. Wright, and other officials of the Society, for which our readers and ourselves owe them hearty thanks.

Fruit and Vegetable Committee.

Present: Mr. G. Bunyard (Chairman), and Messrs. Poupart, Mortimer, J. McIndoe, G. Reynolds, H. S. Rivers, T. Lyue, Jas. Gibson, O. Thomas, W. Pope, W. Fyfe, E. Beckett, J. Jacques, H. Parr, J. Hudson, J. Willard, G. W. Miles, A. Dean, F. Q. Lane, P. G. Veitch, G. Woodward, A. H. Pearson, T. Coomber, W. Crump, G. Kelf, J. Arnold, J. Basham, W. Bates, G. Norman, W. H. Divers, G. Wythes, J. Cheal, and the Rev. W. Wilks.

There was an unusual number of small and not a few comparatively indifferent exhibits before the Committee, inclusive of eight varieties of Potatoes, rather small samples, sent up from Wisley Gardens, where they had been grown. These were presented cooked, and all seemed to be dry and mealy in character; but there were no awards made. It was an ill-chosen time for such a test.

Seedling Apples of no special merit came from Mr. H. C. MONRO, Queen Anne Mansions; the Rev. A. F. WILLICOT, Ipswich; and one from D. WARD, Wisbech, believed to be quite like Devonshire Queen.

A seedling also came from Mr. H. G. WADLOW, Peterboro', named Wadlow's Pippin; and three for name came from Sir A. C. DUNBAR, Duffus House, Elgin.

Mr. Page, gr. to J. B. FORTESQUE, Esq., Dropmore, sent a stewing Pear, which it was agreed was that known as King Edward.

Mr. H. E. GRIBBLE sent from Wynyard Park, Stockton-on-Tees, a red-coloured Muscat Grape, named Hanipoot. It was asked that a vine of it be sent to Wisley for trial.

An Apple held to be Blenheim Pippin came for name from A. E. CLEMENT-SMITH, Esq., Ascot.

A seedling Apple, held to be too much like "Lady Henniker," but of poor quality, came from A. M. MANN, Horley.

From Mr. J. WILLIAMS, Worcester, came a large-sized, richly-coloured, handsome, conical Apple named "Ideal," past its season. It was desired to see it again next year.

Mr. JAS. EYRE sent fruit borne on a curled-feather-like frond of *Cycas revoluta*.

H. H. RASCHEN, Esq., Sideup, sent fruits of three Pigeonnet Apples.

A Cultural Commendation was given to A. B. H. GOLDSCHMIDT, Esq., Caversham Park, Suffolk, for a fine sample of St. Joseph Strawberry.

Mr. J. AMBROSE, Cheshunt, had very fine bunches of the new Grape Melton Constable, which the Committee thought not sufficiently ripe.

Mr. H. PARR, gr. to F. A. BEVAN, Esq., Trent Park, brought a seedling Melon named King Edward.

Samples of several varieties of American Grapes were sent by Mr. W. PETERS, gr. to H. T. STURGIS, Esq., Givons Grove, Leatherhead.

A Cultural Commendation was given to Apple Emperor Alexander, shown in clusters by H. W. ROBERTS, Esq., The Cottage, Watford.

AWARDS OF MERIT.

Pear "S. T. Wright."—This is a medium-sized, early, nicely flavoured Pear with golden-russet coat. It was obtained from a cross between the varieties Beurré Bachelier and Williams' Bon Chrétien.

Apple "Werder's Golden Reincte."—A variety already in commerce. The fruits are of medium size, round, handsome, and intermediate in appearance between those of Cox's Orange Pippin and Allington Pippin. The variety is a capital cropper, and ripens in October. Both these came from Messrs. J. VEITCH & SONS, Chelsea.

Apple "King's Acre Bountiful."—A fine clear yellow conical-shaped fruit, not unlike that of the variety Potts' Seedling. It is a heavy cropper, has nice briskly-flavoured flesh, and is a good cooker. Shown by the KING'S ACRE NURSERY COMPANY, Hereford.

Apple "Hector Macdonald."—The fruits are large and of handsome appearance, being not unlike Peasegood's Nonsuch, but having firmer and brisker flesh. The fruits were prettily striped with red. From Mr. C. ROSS, gr. to Col. ARCHER HOUBLON, Welford Park, Newbury.

COMPETITIVE CLASSES.

DIVISION I.

FRUITS GROWN UNDER GLASS OR OTHERWISE.

(Open to Gardeners and Amateurs only.)

COLLECTIONS OF FRUIT.

Nine Dishes of Ripe Dessert Fruit.—There were three exhibits in this class, and the 1st prize was won by the Rt. Hon. the Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre). He had very finely-coloured Black Hamburg Grapes, large bunches of Muscat of Alexandria, composed of excellent berries; a rather weak "Queen" Pineapple, a large Blenheim Orange Melon, Princess and Golden Eagle Peaches, Victoria Nectarine, Pitmaston Duchess Pears, and Allington Pippin Apples. 2nd, the Hon. Justice SWIFEN-EDDY, Weybridge (gr., Mr. J. Lock). In this exhibit the most remarkable "dishes" were those of Gladstone Peach, Barrington Peach, Marguerite Marillat Pear, and Cox's Orange Pippin Apples. 3rd, the EARL OF LONDESBOURGH, Market Weighton (gr., Mr. J. C. McPherson). The fruits of Cox's Orange Pippin Apple were extremely well coloured.

Six Dishes of Ripe Dessert Fruits.—There were as many as six exhibits in this class, being considerably

more than usual. The 1st prize was awarded to J. W. FLEMING, Esq., Chilworth Manor, Ramsey (gr. Mr. W. Mitchell), who exhibited produce of a very high order of merit. The varieties of Grapes shown were Mrs. Pince and Muscat of Alexandria. The three bunches of "Mrs. Pince" were large, and composed of fine, well-coloured berries, whilst those of Muscat of Alexandria were remarkable alike for weight of bunch and size of berry. Peaches included "Sea Eagle" of exceptional size and good colour, and "Princess of Wales." Apple Worcester Pearmain was shown in unusually good condition, the large size of the fruits being less remarkable than the extraordinary good colour. A dish of excellent fruits of Pear Pitmaston Duchess completed this exhibit. 2nd, Lord BIDDULPH, Ledbury (gr., Mr. J. Dawes), who had very finely-coloured fruits of Humboldt Nectarine, an excellent dish of Marguerite Marillat Pears, and Gros Maroc and Muscat of Alexandria Grapes, &c. 3rd, Sir MARCUS SAMUEL, Bart., Maidstone (gr., Mr. W. H. Bacon), whose bunches of Gros Colmar and Muscat of Alexandria Grapes were exceptionally heavy.

GRAPES.

There were no exhibits in the class for six distinct varieties of Grapes, three bunches of each, or in that for four varieties, three bunches of each, to be selected from certain varieties enumerated in the schedule. The following varieties were shown in exhibits of three bunches each:

Black Hamburg.—All the Grapes shown in this class were still perfectly plump and of fresh appearance notwithstanding the present season is late for this Grape. The best were undoubtedly those from J. W. FLEMING, Esq., for the bunches were heavy, the berries large, and the colour and "finish" perfect. 2nd, Col. G. B. ARCHER HOUBLON, Hallingbury Place (gr., Mr. W. Harrison); and 3rd, the Earl of HARRINGTON, Elvaston Castle, Derby.

Mrs. Pince.—The best was shown by J. W. FLEMING, Esq., the winner of the 1st prize in the previous class; he had good bunches from every point of view. 2nd, Major HIBBERT, Rugby (gr., Mr. W. Camm), who showed unusually large bunches; but the berries lacked colour and "finish."

Black Alicante.—There were only three exhibits in this generally-grown Grape, but the 1st prize collection, from G. C. RAPHAEL, Esq., Englefield Green (gr., Mr. H. H. Brown), were of very fine quality, and of sufficient size; two of the bunches especially exhibited the characteristic "shoulders" of this variety capitally. The 2nd prize was awarded to very heavy bunches from Sir MARCUS SAMUEL, Bart., Maidstone (gr., Mr. W. H. Bacon); and the 3rd prize to Lady TATE, Park Hill, Streatham Common (gr., Mr. W. Howe). This exhibit was very highly coloured and perfectly "finished," and we think should have been placed before the less well coloured specimens that were awarded 2nd prize.

Madresfield Court.—There were four exhibits of this handsome Grape, and very fine bunches were shown by J. W. FLEMING, Esq., who was awarded 1st prize. C. BAYER, Esq., was 2nd, having very nicely-shaped bunches; and the Earl of HARRINGTON, 3rd.

Any other Black variety.—As many as seven exhibits were staged in this class, and the 1st prize was awarded to J. W. FLEMING, Esq., for excellent bunches of Gros Maroc, having berries as large as Plums, and possessing absolutely perfect colour and "finish." 2nd, G. C. RAPHAEL, Esq., Englefield Green (gr., Mr. H. H. Brown), who had three good bunches of the variety Lady Downes, of characteristic shape. 3rd, H. P. STURGIS, Esq., Leatherhead (gr., Mr. W. Peters), with the variety Gros Maroc.

Muscat of Alexandria.—There were eight exhibits in this class. The 1st prize was awarded to C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, London, S.E., who had excellent bunches of handsome shape. 2nd, J. W. FLEMING, Esq., Chilworth Manor, gr., Mr. W. Mitchell. 3rd, the Earl of HARRINGTON.

Any other White variety.—The 1st prize in this class was awarded to the variety Chasselas Napoleon, which was shown in very good condition by C. BAYER, Esq., Forest Hill. The variety Golden Queen won 2nd prize for JOSEPH DRAKES, Esq., Market Rasen (gr.,

Mr. J. Brown); and the same variety from JOHN BARKER, Esq., Bishops Stortford (gr., Mr. G. Beech), was 3rd.

COLLECTION OF HARDY FRUITS.

This Class required thirty dishes of distinct fruits, grown entirely in the open air, not more than twelve varieties of Apples, or eight varieties of Pears. There were three exhibits, the best being one from Sir MARCUS SAMUEL, Bart., Maidstone (gr., Mr. W. H. Bacon). The Apples and Pears were grand. Among the Apples were such varieties as Emperor Alexander, Mère de Ménage, Cox's Orange Pippin, Peasgood's Nonsuch, Stirling Castle, Lord Derby, Warner's King, and Allington Pippin. The specimens of the variety named last were of most attractive appearance. Of Pears, we noticed Triomphe de Vienne, Pitnaston Duchess, General Todleben, Beurré Diel (very fine), and Marie Benoist. Other fruits included Plums Coe's Golden Drop, Monarch, and Damson; Fig Brown Turkey; Medlars, Mulberries, Peach Sea Eagle, Kent Cobnuts, Strawberry "St. Joseph," and Nectarine Prince of Wales. The 2nd prize was awarded to T. L. BOYD, Esq., Tonbridge (gr., Mr. E. Coleman). This exhibitor showed seven varieties of Plums and three varieties of Peaches, but had no Strawberries, Figs, Mulberries, or Medlars. The Apples and Pears, though of good quality (especially Peasgood's Nonsuch), were not equal to those in the exhibit previously described. 3rd, Major POWELL COTTON, Birehington (gr., Mr. J. Cornford).

DIVISION II.

FRUITS GROWN ENTIRELY OUT-OF-DOORS.

(Open to Nurserymen and Market Growers only).

This division comprised three classes, and the conditions were that nurserymen and market growers must exhibit as individuals or as firms. Combinations of individuals or firms were not allowed, nor collections of produce from districts. The fruits must have actually been grown by the exhibitor. Any method of staging was allowed, subject to the following reservations: The number of fruits is not limited, but the baskets or dishes must not exceed 15 inches in diameter if circular, or 19 by 15 if rectangular, unless they be sieves or half-sieves. Duplicate trees are permitted in Class 16, but not duplicate dishes or baskets of fruit. No trees are admissible in Classes 14 and 15. The fruit in Classes 14 and 15 must in no case be raised higher than 18 inches from the table, but the use of foliage-plants is allowed. These three classes almost filled the centre of the large Hall. It would have been more interesting and satisfactory had market-growers been given a class to themselves.

The first of the three classes was for exhibits to fill 24 feet run of 6 feet tabling. Nine competitors staged in this class. Messrs. G. BUNYARD & Co., Maidstone, were awarded the 1st prize for 165 dishes of distinct varieties. The fruits were generally clean and highly coloured, but in some varieties did not attain to the size found in some other exhibits. Notable dishes of Apples were those of Lady Sudeley, Emperor Alexander, Warner's King, Mère de Ménage, Gaseoyne's Seedling, Royal Jubilee, Bismarck, Worcester Pearmain, Cox's Pomona, The Queen, Lane's Prince Albert, Wealthy, Peasgood's Nonsuch, Newton Wonder, Allington Pippin, and Stirling Castle. Of Pears there were fine dishes of Beurré Fouqueray, Marguerite Marrillat, Triomphe de Vienne, Doyenné du Comice, Pitnaston Duchess, and Doyenné Boussoch. A few varieties of Plums, Medlars, and other small fruits completed the collection. Messrs. H. CANNELL & SONS, Swanley, Kent, gained the 2nd award, and in their exhibit were some of the finest dishes of Apples in the exhibition. Splendid in size and colour were those of Peasgood's Nonsuch, Gaseoyne's Scarlet Seedling, Emperor Alexander, Cox's Pomona, Gravenstein, Lady Sudeley, Lord Suffield, Lord Derby (finely coloured), Cellini, Bramley's Seedling, Bismarck, Dumelow's Seedling, and The Queen. These are only a few of the noteworthy dishes in this exhibit. Pears were not so strongly represented, but several good dishes were staged, including those of Beurré Alex. Lucas, Madame Treyve, Doyenné du Comice, Pitnaston Duchess, and Doyenné Boussoch. The 3rd prize went to a market grower, Mr. W. POUPART, Twickenham. The exhibits were mostly staged in boxes and baby baskets, and there was not a weak dish among them. Most of the Apples previously mentioned were well represented. Also four varieties of Plums, very fine; they were Monarch,

Sandall's Belle de Septembre, and September Prolific. Pears included very fine Pitnaston Duchess, Louise Bonne of Jersey, Doyenné du Comice, and Beurré Fouqueray.

In this class Messrs. J. VEITCH & SONS, Ltd., Chelsea, also staged a magnificent collection of fruits, clean and well coloured. Emperor Alexander, Ribston Pippin, The Queen, Lord Derby, Cox's Orange Pippin, and Bramley Seedling Apples were excellent.

Messrs. CHEAL & SONS, Crawley, staged a collection of highly-coloured fruits, interspersed with small Palms and other foliage plants. Messrs. PAUL & SONS, The Old Nurseries, Cheshunt, staged a good collection of medium-sized fruits. Messrs. H. SPOONER & SONS, Hounslow; Messrs. J. PEED & SON, West Norwood; Messrs. R. H. BATH, Limited, The Floral Farms, Wisbech; and THE HORTICULTURAL COLLEGE, Swanley, also set up collections in this class.

Exhibits on Table 16 feet by 6 feet.—The conditions imposed in Class 15 were similar to those in the preceding class, excepting that the length of tabling to be filled was 16 by 6 feet. Seven exhibitors staged, the premier award going to Mr. J. BASHAM, Bassaleg Nursery, Monmouth. This exhibit was effectively set up and interspersed with highly-coloured foliage plants. The best dishes of Apples were Peasgood's Nonsuch, Lane's Prince Albert, Gaseoyne's Scarlet, and The Queen. Pond's Seedling, President, and Diamond Plums were well represented. The 2nd prize went to Mr. G. MOUNT, Rose Nurseries, Canterbury. Wealthy Apple was very good, as were Beurré Diel, and Pitnaston Duchess Pears. Messrs. LAXTON BROS., Bedford, were 3rd, also with a very good collection, in which Grand Duke and Monarch Plums were notable. Messrs. H. LANE & SON, Berkhamsted, Messrs. W. LOBJOIT & SON, Hounslow, Messrs. J. LAING & SONS, Forest Hill, and Mr. J. B. COLWILL, Sidmouth were also well represented in this class.

ORCHARD-HOUSE FRUIT AND TREES.

In Class 16 for orchard-house fruit and trees arranged on 24 feet run of tabling, there were but two exhibitors, Messrs. G. BUNYARD & Co. and Messrs. RIVERS & SONS, Sawbridgeworth, and the awards went in this order. In the 1st prize collection finely fruited trees of Emperor Alexander, Gaseoyne's Seedling, Baldwin, Lord Burghley, Belle Dubois, and Peasgood's Nonsuch Apples were staged; and of Pears Conseiller de la Cour, Doyenné du Comice, Beurré Bosc, Vicar of Winkfield, and Directeur Hardy. Lady Palmerston and Golden Eagle Peaches were also well represented. Fine dishes of Pitnaston Duchess, Beurré Bosc, Beurré Alex. Lucas, and Beurré Diel Pears; as well as Apples Cox's Orange Pippin, Peasgood's Nonsuch, Gaseoyne's Seedling, and several other varieties of Apples all highly coloured.

Messrs. RIVERS & SON had finely fruited Plums Late Orange, Peach Salway, and Apple Peasgood's Nonsuch. Among their dishes were Gros Maroe and Alicante Grapes, Cox's Orange Pippin and Peasgood's Nonsuch Apples, Golden Eagle Peaches, and several varieties of Plums.

DIVISION III.

FRUITS GROWN ENTIRELY IN THE OPEN AIR (EXCEPT CLASS 30).

(Open to Gardeners and Amateurs only.)

APPLES.

For twenty-four distinct varieties of Apples, to include sixteen cooking and eight dessert varieties, there was strong competition, resulting in some excellent exhibits. Mrs. ALEXANDER, Maidstone (gr., Mr. C. Crane), won 1st prize, the high colour of the fruits being very noteworthy. The varieties included Ribston Pippin, Cox's Orange Pippin, Christmas Pearmain, Swedish Reinette, Mother, King of Tompkin's County, Baumann's Red Winter Reinette, Mabbot's Pearmain, The Queen, Lane's Prince Albert, Lord Derby, Emperor Alexander (excellent), Annie Elizabeth, Warner's King, Sandringham, Mère de Ménage (excellent, fruit of a high colour), Belle du Bois (splendid examples), Withington Filbasket, Lady Henniker, and Tyler's Kernel. R. H. B. MARSHAM, Esq., Maidstone (gr., Mr. W. Lewis), was 2nd with fruits also of high colour and good finish; Gaseoyne's Scarlet, Wealthy, Peasgood's Nonsuch, and Warner's King being especially prominent. Mrs. HAYWOOD, Reigate (gr., Mr. C. J. Salter), was 3rd; with CHAS. O. WALTER, Esq., Wantage, extra 3rd.

For eighteen dishes of Apples, distinct, to include twelve cooking and six dessert varieties, there were nine competitors, the fruit throughout being of high quality. Lord BIDDULPH, Ledbury (gr., Mr. J. Dawes), was awarded 1st prize for an excellent contribution—Worcester Pearmain, Ribston Pippin, Allington Pippin (in excellent condition), Cox's Orange Pippin, Washington, Gascoyne's Scarlet (fine dish of fruits), Pott's Seedling, Tyler's Kernel (highly coloured), Cox's Pomona, Sandringham, Beauty of Kent, The Queen, Blenheim Orange, Late Admiral, Peasgood's Nonsuch, Warner's King, Lord Derby, and Bismarck were included. O. E. d'AVIGDOR-GOLDSMITH, Esq., Tonbridge (gr., Mr. C. Earl), took 2nd prize with a collection of excellent colour and appearance, Gascoyne's Scarlet being especially noticeable. The Rt. Hon. the Earl of PEMBROKE, Salisbury (gr., Mr. T. Challis), was 3rd. Some very well finished fruits were shown in this class by Mr. Parr, gr. to F. A. BEVAN, Esq., Trent Park, Barnet.

For twelve dishes of Apples, including eight cooking and four dessert varieties, HUGH C. SMITH, Esq., Roehampton (gr., Mr. Wallace), was 1st, the dessert varieties being especially commendable. Lord H. DE WALDEN, Saffron Walden (gr., Mr. J. Vert), was 2nd with fruits of smaller size but of excellent appearance. J. T. CHARLESWORTH, Esq., Redhill (gr., Mr. T. W. Herbert), was 3rd.

A class for six dishes of cooking Apples caused strong competition, large highly-coloured fruits being generally exhibited. Those of Mrs. ALEXANDER, Maidstone (gr., Mr. C. Crane), were awarded 1st prize, and included the varieties Mère de Ménage, Bismarck, and Emperor Alexander, all highly coloured, Warner's King, Belle du Bois, and Peasgood's Nonsuch. The quality was first-class all through. The 2nd prize was awarded to EARL DE GREY, Kingston (gr., Mr. J. Smith). The variety Emperor Alexander was shown in perfection in this collection.

For six distinct dishes of dessert Apples, Mrs. ALEXANDER again surpassed all other competitors, having the varieties King of the Pippins, Egremont Russett, Cox's Orange Pippin, Swedish Reinette, Christmas Pearmain, and Gascoyne's Scarlet. Mrs. BURNS, North Myms Park (gr., Mr. C. R. Fielder), was awarded 2nd prize, Cox's Orange Pippin and Blenheim Orange being shown in grand form. These fruits showed very high "finish."

PEARS.

The class for eighteen distinct dishes of dessert Pears brought two excellent exhibits of fruit from Sir MARCUS SAMUEL, Bart., Maidstone (gr., Mr. W. H. Bacon), and Major POWELL COTTON, Birehington (gr., Mr. J. Cornford), who were awarded 1st and 2nd prizes respectively. Among the premier prize exhibit Souvenir du Congrès, Louise Bonne of Jersey, Triomphe de Vienne, Marguerite Marrillat, and Beurré Superfin were in fine character. Durondeau Doyenné Boussoch, Marie Benoist, Doyenné du Comice, Princess, Conference, Beurré Diel, Pitnaston Duchess, &c., were also included. Major POWELL COTTON's collection contained excellent fruits, many of the varieties being riper than those in the former collection. Durondeau, Souvenir du Congrès, Triomphe de Vienne, &c., were noteworthy.

For twelve distinct dishes of dessert Pears there were four entries. The Rev. T. McMURDIE, Woburn Park (gr., Mr. A. Basile), was placed 1st, the varieties Souvenir du Congrès and Marguerite Marrillat being shown in perfect condition. Mrs. ALEXANDER was placed 2nd; and the Earl of PEMBROKE, Salisbury, 3rd.

In the class for nine dishes of dessert Pears, Lord BIDDULPH, Ledbury (gr., Mr. J. Dawes), was 1st, including good examples of Durondeau, Marie Louise, and Pitnaston Duchess. 2nd prize F. A. BEVAN, Esq., Trent Park (gr. Mr. H. Parr), whose Pitnaston Duchess were extremely good.

A class for six distinct dishes of dessert Pears brought eight entries, the quality throughout being first-class and resulting in keen competition. "Colour" and "finish" again told, and C. A. MORRIS FIELD, Esq., Sevenoaks (gr. Mr. R. Edwards), secured 1st prize with Gansel's Bergamot, Durondeau, Doyenné du Comice, Marguerite Marrillat, Beurré Bachelier, and Pitnaston Duchess. The Duke of PORTLAND, Welbeck (gr. Mr. Roberts), was 2nd with large fruits, but scarcely as well finished as the 1st prize exhibit.

For three dishes of stewing Pears Major POWELL COTTON, Birehington, secured 1st place for quality and finish; WM. MICHAELIS, Esq., Tanbridge Court (gr. Mr. J. D. Simmons), being 2nd with fruits of large size, those of Uvedale St. Germain being immense, ...

PEACHES.

For three dishes distinct there were nine competitors. The Earl of HARRINGTON, Derby (gr., Mr. J. H. Goodacre), being an easy 1st with Golden Eagle, Barrington, and Exquisite, all large and of excellent colour. C. R. W. ADLANE, Esq., Cambridge (gr., Mr. R. Alderman), was 2nd.

The best single dish of Peaches was shown by Mrs. ALEXANDER, Maidstone, who had the variety Sea Eagle; 2nd being awarded to J. J. MORRISH, Esq., Oxshott (gr., Mr. C. W. Mills), for a good dish of Late Admirable. Several other meritorious dishes were seen in this class.

The entries for Nectarines were not numerous, no prizes being awarded in Class 29; while for one dish of one variety competition was not high. Lord BIDDULPH's dish of Humboldt carried off 1st prize; with R. BEDINGFELD, Esq., Roehampton (gr., Mr. J. Sparks), 2nd with the same variety.

Excellent fruits of Reine Claude de Bavay, shown by J. K. D. WINGFIELD DIGBY, Esq., M.P., Sherborne Castle (gr., Mr. T. Turton), carried off 1st honours, a dish of Jefferson Gage, brought by J. LIDDELL, Esq., Newbury (gr., Mr. R. Lye), being 2nd.

For one dish of cooking Plums of one variety, Monarch was greatly in evidence, but White Magnum Bonum, shown by F. W. THOMAS, Esq., Wannock, Polegate, was awarded 1st prize.

G. J. GRIBBLE, Esq., Biggleswade (gr., Mr. A. Carlisle), won 1st prize for three dishes of Damsons; T. CLINCH, Esq., Sittingbourne, winning a similar honour for a single dish of Bullaces.

CHERRIES.

There were six entries for a dish of Morello Cherries. A dish of excellent fruits, shown by H. F. WALKER, Esq., Balcombe (gr., Mr. J. Coles), were placed 1st; the exhibit from J. B. FORTESCUE, Esq., running very close for the 1st place.



FIG. 111.—PEAR SOUVENIR DU CONGRÈS.

PLUMS.

Plums were especially well shown, and considering the lateness of the season many of the exhibits were excellent.

In a class for six dishes, including two dessert and four cooking varieties, there was excellent competition, the judges awarding the collection sent by Lord H. DE WALDEN, Saffron Walden (gr., Mr. Vert), 1st place. The varieties in this exhibit were Coe's Violet (an extremely handsome fruit), Coe's Golden Drop, Pond's Seedling (excellent), Grand Duke, Primate, and Monarch. The Earl of STAIR, Dalkeith (gr., Mr. W. Smith), came 2nd with good fruit, including excellent fruits of Jefferson's Gage.

For three dishes of Gages, distinct, the Earl of PEMBROKE, Salisbury (gr., Mr. T. Challis), was an easy 1st, with splendid fruits of Transparent Gage, Rivers' Golden Gage, and Oullin's Golden Gage. 2nd, J. B. FORTESCUE, Esq., Maidenhead (gr., Mr. C. Page).

The class for one dish of Coe's Golden Drop brought a dozen and a half competitors displaying this fruit in many characters. The premier dish was shown by the Marquis of NORTHAMPTON, Castle Ashby (gr., Mr. Searle). Lord H. DE WALDEN was 2nd.

A more interesting class was that for one dish of any variety of dessert Plum other than the last-named

DIVISION IV.

SPECIAL DISTRICT COUNTY CLASSES.

Open to Gardeners and Amateurs only.

In this division prizes are offered to exhibitors in groups of counties for six dishes of Apples (distinct), four cooking and two dessert, and for six dishes of dessert Pears.

OPEN ONLY TO KENT GROWERS.

Kent is the first county mentioned, the 1st prize for Apples going to Mr. W. STOWERS, Sittingbourne. His best dishes were Emperor Alexander, Peasgood's Nonsuch, and Gloria Mundi. 2nd, Mr. E. Coleman, gr. to L. BOYD, Esq., Tonbridge.

Pears.—1st, Mr. STOWERS, with six fine dishes, Marguerite Marrillat, Pitmaston Duchess, and King Edward being the most striking varieties. 2nd, Mr. COLEMAN.

OPEN TO GROWERS IN SURREY, SUSSEX, HANTS, DORSET, SOMERSET, DEVON, AND CORNWALL.

Apples.—The competition was very keen, twelve competitors staging very good exhibits. The 1st prize went to Mr. G. Lock, gr. to B. H. HILL, Esq., Crediton Devon. His varieties were Emperor Alex-

ander, Peasgood's Nonsuch, Mère de Ménage, Warner's King, Cox's Orange Pippin, and Ribston Pippin. 2nd, Mr. Turton, gr. to J. D. W. DIGBY, Esq., M.P., Sherborne Castle.

Pears.—The 1st prize went to a Sussex grower, Mr. F. W. THOMAS, Wannock. 2nd, Mr. TURTON.

OPEN TO GROWERS IN WILTS, GLOUCESTER, OXFORD, BUCKS, BERKS, BEDS, HERTS, AND MIDDLESEX.

Apples.—There were fourteen competitors. 1st, Mr. Davies, gr. to A. G. WRIGHT, Esq., Newent, with excellent samples. 2nd, Mr. A. Carlisle, gr. to J. GRIBBLE, Esq., Biggleswade.

Pears.—1st, Mr. Bannister, gr. to Mrs. H. ST. V. AMES, Westbury-on-Trym, Doyenné Poussoch and Beurré Hardy being very fine and highly coloured. 2nd, Mr. CARLISLE.

OPEN TO GROWERS IN ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HUNTS, AND RUTLAND.

Apples.—Mr. C. Taylor, gr. to K. M. COURTAULD, Esq., was 1st, with clean and highly-coloured samples. 2nd, Mr. W. Harrison, gr. to Colonel G. ARCHER HOUBLON, Bishops Stortford. There were six exhibits.

Pears.—Mr. W. Allan, gr. to Colonel the Hon. C. HARBORD, Norwich, was a good 1st, with six excellent dishes; the variety Doyenné du Comice was very fine. 2nd, Mr. W. HARRISON. There were four exhibits.

OPEN TO GROWERS IN LINCOLN, NORTHAMPTON, NOTTS, WARWICK, LEICESTER, DERBY, STAFFS, SHROPSHIRE, AND CHESHIRE.

Apples.—1st, J. LEE, Esq., High Bebington. 2nd, Mr. Divers, gr. to the Duke of RUTLAND, Belvoir Castle. There were eight exhibitors.

Pears.—Mr. Roberts, gr. to the Duke of PORTLAND, Welbeck, was easily 1st, with handsome fruits. 2nd, Mr. W. Camm, gr. to Major HIBBERT, Rugby. There were six exhibits.

OPEN TO GROWERS IN WORCESTER, HEREFORD, MONMOUTH, GLAMORGAN, CARMARTHEN, AND PEMBROKE.

Apples.—1st, Mr. Spencer, gr. to H. C. MOFFATT, Esq., Ross. 2nd, Mr. R. M. WHITNEY, Esq., Hereford, among four exhibitors.

Pears.—Mr. SPENCER was again 1st with very fine, highly-coloured fruits. 2nd, Mr. C. Crooks, gr. to the Dowager Lady HINDLIP, Droitwich.

OPEN ONLY TO GROWERS IN OTHER COUNTIES OF WALES.

Mr. H. Forder, gr. to Col. CORNWALLIS, West Ruthin, was the only exhibitor of Apples and Pears, and was awarded the 1st prize in each class.

OPEN TO GROWERS IN THE SIX NORTHERN COUNTIES OF ENGLAND AND THE ISLE OF MAN.

Two collections of Apples and the same of Pears were staged in this class, Mr. B. Ashton, gr. to the Earl of LATHAM, taking 1st prize for both Apples and Pears. Mr. W. Chuck, gr. to C. THELUSSON, Esq., Doncaster, was 2nd in each class.

OPEN ONLY TO GROWERS IN SCOTLAND

Apples.—Mr. C. Webster, gr. to the Duke of RICHMOND AND GORDON, Gordon Castle, was easily 1st. 2nd, Mr. Day, gr. to the Earl of GALLOWAY, Garliestown. There were four exhibitors.

Pears.—The prizes here were reversed, Mr. DAY being 1st; and Mr. WEBSTER 2nd.

OPEN ONLY TO GROWERS IN IRELAND.

There was but one exhibit of Apples, and that came from Mr. J. G. Weston, gr. to Viscount DUNCANNON, Bessborough, Pelstown. The fruits were of fair size and good colour, and comprised the following varieties:—The Queen, Bismarck, Loddington Seedling, Grenadier, Col. Vaughan, and Worcester Pearmain.

The concluding class in this section was reserved for growers in the Channel Islands, but no exhibits were forthcoming.

It may be remarked that in the exhibits of the foregoing, both of Apples and Pears exhibited by the Midland and Northern growers, the varieties were identical with those shown by others hailing from the South, the only exception perhaps was that one found, among Pears, a few good dishes of Williams' Bon Chrétien.

DIVISION V.

SINGLE DISHES OF FRUIT GROWN IN THE OPEN AIR.

(Open to Gardeners and Amateurs only.)

CHOICE DESSERT APPLES.

Competition in the classes for choice dessert Apples was keen, and nearly all the varieties were shown in good character, the present season having proved an excellent one for producing fruits of superb finish and colour.

Allington Pippin brought twenty-five competitors. W. STOWERS, Esq., Sittingbourne, taking 1st prize, and W. THOMAS, Esq., Polegate, 2nd.

American Mother was represented by twenty-one dishes, varying greatly in quality, but those from H. C. MOFFATT, Esq., Ross (gr., Mr. T. Spencer), were easily 1st. N. R. PAGE, Esq., Clacton-on-Sea, 2nd.

Blenheim Orange was shown in excellent character by no fewer than thirty-five competitors. Those from R. J. LAMBERT, Esq., Oxshott, being of richer colour and finer finish were awarded 1st prize. J. COLMAN, Esq., Gattopark, was 2nd.

Charles Ross.—This new variety was represented by several excellent dishes. Mr. G. PYNE, Topsham, was awarded the 1st of the prizes offered by Messrs. Horne for six highly-developed fruits. Mr. W. STEVENS, Sittingbourne, was 2nd.

Col's Orange Pippin.—There were thirty-seven dishes from individual exhibitors, the premier dish belonging to Lord POLTIMORE, Exeter (gr., Mr. T. H. Slade). Mr. PARFITT, Caversham, 2nd.

Egremont Russett was represented by fourteen dishes. WALPOLE GREENWELL, Esq., Marden Park (gr., Mr. W. Lintott), was 1st. T. L. BOYD, Esq., Tonbridge, 2nd.

James Grieve.—There were nine dishes, the 1st prize being won by Col. ARCHER HOUBLON, Bishops Stortford. 2nd, Mr. R. M. WHITING, Credenhill.

King of the Pippins.—Twenty-four dishes were shown, the Kentish growers again being to the front, Mr. STOWERS, Sittingbourne, taking 1st prize with an excellent plate of fruits. J. L. NEWLAND, Esq., Byfleet, 2nd.

Lady Sudeley was well represented. J. K. WINGFIELD DIGBY, Esq., Sherborne Castle (gr. Mr. Turton), was placed 1st. 2nd, G. J. GRIBBLE, Esq., Biggleswade.

Margil was not above mediocre quality although the 1st prize dish contained good fruits, with which A. W. G. WRIGHT, Esq., Newent, gained 1st. 2nd, G. J. GRIBBLE, Esq., Biggleswade.

Of Ribston Pippin thirty-one dishes were displayed. Sir OSWALD MOSLEY, Bt., Burton-on-Trent (gr. Mr. G. Woodgate), 1st. Walpole GREENWELL, Esq., 2nd.

Worcester Pearmain was shown by no fewer than thirty exhibitors. J. B. FORTESCUE, Esq., Maidenhead, was placed 1st, with G. J. GRIBBLE, Esq., Biggleswade, 2nd.

The Class for any other variety of Dessert Apples not included in any of the classes from Classes 52 to 63, brought a great number of entries. Of many varieties, Cornish Giant, staged by the Hon. Justice SWINFEN-EADY, took 1st prize, evidently for meritorious flavour. The variety Rival was awarded 2nd and 3rd prize, being staged by Mr. W. STOWERS, Sittingbourne, and Colonel ARCHER HOUBLON, Welford Park, respectively. Mabbot's Pearmain, shown by Lord POLTIMORE, was 4th.

COOKING APPLES.

Bismarck.—The competition in these classes was very keen, and in many cases the judges must have had considerable difficulty in awarding the prizes. Some splendidly-coloured fruit was shown in this class, and the size of the fruit was quite up to standard. Fifteen dishes were staged, the 1st prize being awarded to J. K. D. WINGFIELD DIGBY, Esq. (gr., Mr. T. Turton); and the 2nd to E. W. CADDICK, Esq. (gr., Mr. M. Roe).

Blenheim Orange.—Twenty-two dishes were shown, and the examples of this excellent Apple were clean, large, and well coloured. The 1st prize was awarded to the Hon. Justice SWINFEN-EADY, for a very fine and well-coloured dish of fruit; and the 2nd prize to H. C. SMITH, Esq., for a smaller but very clean and even dish.

Bramley's Seedling.—Seventeen dishes were staged in this class, and seven of these were good examples of

this fine Apple. The 1st prize fruits were particularly good. These were shown by Col. ARCHER HOUBLON (gr., Mr. C. Ross), the veteran fruit grower and raiser. The 2nd prize was awarded to E. W. CRADDICK, Esq. (gr., Mr. M. Roe), for a dish only slightly less meritorious.

Ecklinville.—Nine dishes were staged. This was a rather weak class, and this variety does not appear to be holding its ground in the public estimation. Its softness and spotty appearance is no doubt accountable for this. 1st prize, Mr. R. M. WHITING, Credenhill, Hereford. 2nd, J. COLMAN, Esq., Reigate (gr., Mr. W. Bound).

Gascogne's Scarlet.—Thirteen dishes of this beautifully coloured variety were shown. The 1st prize was given to Rev. F. W. THOMAS, Polegate, for a fine dish of splendidly coloured fruits; and the 2nd to Mr. W. STOWERS, Sittingbourne.

Golden Noble.—This variety is of the highest quality, and of the nineteen dishes shown ten were good examples. The 1st prize dish, which was excellent, was shown by A. W. G. WRIGHT, Esq. (gr., Mr. W. H. Davies); and the 2nd to M. MICHAELIS, Esq. (gr., Mr. J. Simmons).

Grenadier.—There appeared to be only two dishes of this good Apple, the 1st prize being awarded to J. B. FORTESCUE, Esq. (gr., Mr. C. Page). The 2nd prize was not awarded.

Luc's Prince Albert.—Thirteen dishes were shown. Its freedom of cropping, quality, and late-keeping properties make it indispensable. The 1st and 2nd prize dishes were good examples of the variety, and the 1st and 2nd prizes were awarded to Sir OSWALD MOSLEY, Bart., and Mr. W. STOWERS respectively.

Lord Derby.—Eleven dishes were staged in this class. 1st prize, Mr. W. STOWERS. 2nd, Col. ARCHER HOUBLON, Bishops Stortford (gr., Mr. W. Harrison).

Mère de Ménage.—A good dish of this variety was staged by Mr. W. STOWERS, who was awarded the 1st prize. The 2nd was given to JOHN LEE, Esq.

Newton Wonder.—Open only to exhibitors living in Cardigan, Radnor, Shropshire, Stafford, Warwick, Northampton, Bedford, Cambridge, Essex, or counties farther north. Nine dishes of this excellent Apple were exhibited in this competition, the 1st prize being awarded to the Earl of LONDENBOROUGH (gr., Mr. J. C. McPherson) for medium-sized but highly coloured fruits; and the 2nd prize to the Duke of RUTLAND (gr., Mr. W. H. Divers) for a fine dish of fruit, but somewhat lacking in colour. The 3rd prize was given to Col. HARBORD (gr., Mr. Wm. Allen.)

Open only to exhibitors living south of the above-mentioned counties. Twenty-one dishes were staged in this class, some of them being very fine examples. The 1st prize was awarded to Mr. W. STOWERS, for a dish of well-coloured fruits. The 2nd prize to the Earl of PEMBROKE (gr., Mr. T. Challis), for a dish of larger and equally well coloured fruit; and the 3rd prize to Mr. F. W. THOMAS.

Peasgood's Nonsuch.—Twenty-four dishes of fruits were staged in this class, and among them were half-a-dozen dishes of very fine fruit, and here the competition was very keen. The 1st prize was awarded to the Hon. W. LOWTHER (gr., Mr. A. Andrews); and the 2nd to E. S. HANBURY, Esq. (gr. Mr. F. W. Church) (Peasgood's Nonsuch).

Pott's Seedling.—Only four dishes of this variety were shown, the 1st prize being awarded to J. K. D. WINGFIELD DIGBY, Esq., and the 2nd prize to Sir OSWALD MOSLEY, Bart.

Stirling Castle.—Seven dishes were shown. The 1st prize was awarded to Col. ARCHER HOUBLON for a good even dish of fruit; and the 2nd prize went to Mr. R. M. WHITING.

Waltham Abbey Seedling.—Of the four dishes shown in this class the dish of fruit shown by E. W. CRADDICK, Esq., was adjudged 1st; and Col. ARCHER HOUBLON, 2nd.

Warner's King.—Eleven dishes were exhibited. 1st prize, N. R. PAGE, Esq. 2nd prize, J. DRAKE, Esq. (gr., Mr. R. Brown), both dishes being good examples of this fine Apple.

Any other variety not named above.—Thirty-five dishes of Apples were exhibited in this class. The 1st prize was awarded to Col. WARDE (gr., Mr. D. W. Walder) for a good dish of *Royal George* or *Wiltshire Defiance*. The 2nd prize to C. A. MORRIS FIELD, Esq. (gr., Mr. J. R. Allen), for a dish of *Emperor Alex-*

ander; and the 3rd prize to B. H. HILL, Esq. (gr., Mr. G. Lock), for a dish of *Loddington Seedling*.

DESSERT PEARS.

Beurré Hardy.—There were fourteen exhibits in this class, and very fine specimens of this good Pear were exhibited. The 1st prize was won by Mrs. H. St. V. AMES, Westbury-on-Trym (gr., Mr. W. H. Bannister). 2nd, Col. G. B. ARCHER HOUBLON, Bishop's Stortford (gr., Mr. W. Harrison).

Beurré Superfin.—There were only six exhibits in this class, and several of them were only of second-rate quality. Excellent fruits secured 1st prize for J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset (gr., Mr. T. Turton); and Mr. W. STOWERS, Sittingbourne, was 2nd.

Doyenné du Comice, &c.—The exhibits in a class for *Comte de Lamy* were not noteworthy. In the following class, however, that for *Doyenné du Comice*, contained twelve dishes of fruits which for the most part were of very good quality. The 1st prize was awarded to Col. the Hon. C. HARBORD, Gunton Park, Norwich (gr. Mr. W. ALLEN); and the 2nd prize to J. K. D. WINGFIELD DIGBY, Esq.

Durondeau.—Eight competitors staged exhibits in this class, the individual fruits varying very greatly in size and degree of ripeness. The 1st prize was won by Col. WARD, M.P., Teston (gr. Mr. D. W. Walder); and J. K. WINGFIELD DIGBY, Esq., was 2nd.

Émile d'Heyst.—Of five exhibits in this class the best was one from J. K. WINGFIELD DIGBY, Esq.; and Col. C. HARBORD was 2nd. Both exhibits were of very fine quality.

Fondante d'Automne.—There were eight exhibits, the best being from H. C. MOFFATT, Esq., Ross, Hereford (gr., Mr. Spencer). 2nd, T. L. BOYD, Esq., Tonbridge (gr., Mr. E. Coleman).

Louise Bonne of Jersey.—Of this extremely popular Pear there were twelve exhibits of fine juicy specimens. The 1st prize was gained by E. A. LEE, Esq., Liphook (gr., Mr. J. Sherlock); and the 2nd prize by G. J. GRIBBLE, Esq., Biggleswade (gr., Mr. A. Carlisle).

Marguerite Marillat.—One of the features of the entire show were the splendid specimens of this somewhat new Pear, which were seen in so many collections. In this class also the fruits were grand, being of large size, and very attractive by reason of their high colour. 1st, Mr. W. STOWERS. 2nd, Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter).

Marie Louise.—There were eight exhibits in this class, all of them unripe. The best were from Col. C. HARBORD; and the 2nd prize was gained by J. K. D. WINGFIELD DIGBY, Esq.

Pitmaston Duchess.—This very handsome, large-sized Pear, of medium quality, was shown by twelve competitors, and most of the specimens were very good ones. The 1st prize was won by J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr., Mr. Chas. Page); and the 2nd prize by B. H. HILL, Esq., Crediton, (gr., Mr. G. Lock).

Souvenir du Congrès.—There were six exhibits of this good Pear, the best being from the Rev. T. McMURDIE, Weybridge (gr., Mr. A. Bastile). The 2nd prize was awarded to the Marquis of NORTHAMPTON, Castle Ashby (gr., Mr. A. R. Searle).

Thompson's.—Of nine dishes in this class, the best came from J. K. D. WINGFIELD DIGBY, Esq.; and the 2nd prize was won by Colonel the Hon. C. HARBORD.

Triomphe de Vienne.—Of five excellent exhibits of this Pear, the best was from H. C. MOFFATT, Esq., Ross. 2nd, T. L. BOYD, Esq., Tonbridge (gr., Mr. E. Coleman).

Williams' Bon Chrétien.—Notwithstanding the late date of season there were ten exhibits of this early-ripening Pear, but most of the fruits were over-ripe. Perfectly sound ones, however, were found for the 1st prize. These were from Col. G. B. ARCHER HOUBLON. The 2nd prize was won by Lord BELPER, Derby (gr. Mr. W. H. Cooke).

Any variety not named above.—The 1st prize was awarded to the variety *Seckle*, exhibited by Col. ARCHER HOUBLON; and the 2nd prize to *Madame Treyre*, exhibited by J. K. WINGFIELD DIGBY.



THE Gardeners' Chronicle

No. 929.—SATURDAY, Oct. 15, 1904.

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TWO LEAF-MINERS.

I.—THE LILAC LEAF-MINER (*Gracilaria syringella*, Fabricius).

II.—THE LABURNUM LEAF-MINER (*Cemistoma laburnella*, Martini) (vide also *Gardeners' Chronicle*, November 26, 1881).

DURING the present year there has been an abnormal number of two leaf-miners present—one attacking to a serious extent the Lilac, another the Laburnum. Every year we have more or less of an attack of these insects, but as a rule they are not sufficiently abundant to do much harm, unless it is to young trees and nursery stock. Both damage the leaves by mining into the parenchyma, and producing blisters often of large extent. The Lilac Leaf-miner is known as *Gracilaria syringella*, the Laburnum Leaf-miner as *Cemistoma laburnella*. It is frequently to be observed that trees are annually attacked if we make a careful search, but too often no notice is taken of a casual blister here and there. Suddenly one year the trees are seen to be badly blistered, looking as if the leaves had been scorched. This is due to certain climatic conditions, at present little understood, which favour the sudden increase of certain insects, or in a few cases to the non-existence of natural enemies in the preceding season. It is advisable to eradicate such insects that are prone to become pests

as soon as there are any signs of them, and not wait until they have increased to such an extent that they cause damage to their food plant or host.

I.—THE LILAC LEAF-MINER (*Gracilaria syringella*, Fabricius).

This insect has been known for a great many years. Réaumur in 1736 (*Memoires pour servir à l'Histoire des Insectes*, vol. ii., mem. 5) refers to the habits of the larva on Lilac and Privet. Fabricius in 1793 (*Entomologia systematica*) named it *Tinea syringella*. It has been noticed in very many districts in Great Britain, and also

the apical portion of the leaves; but those of the second brood may occur at the sides, base, or in the middle; they are very irregular in form. They may be noticed from May to October.

The life-history of this insect is now well known. The moth varies in size from just under to just over half an inch in wing expanse, and is about one-fourth of an inch long. In colour it is silvery to creamy-white, with bands of bright brown, some angulated, the apex mostly fuscous-brown except for two small white spots near the edge; the hind wings are grey. The legs have the basal parts grey to dull yellowish-grey, the

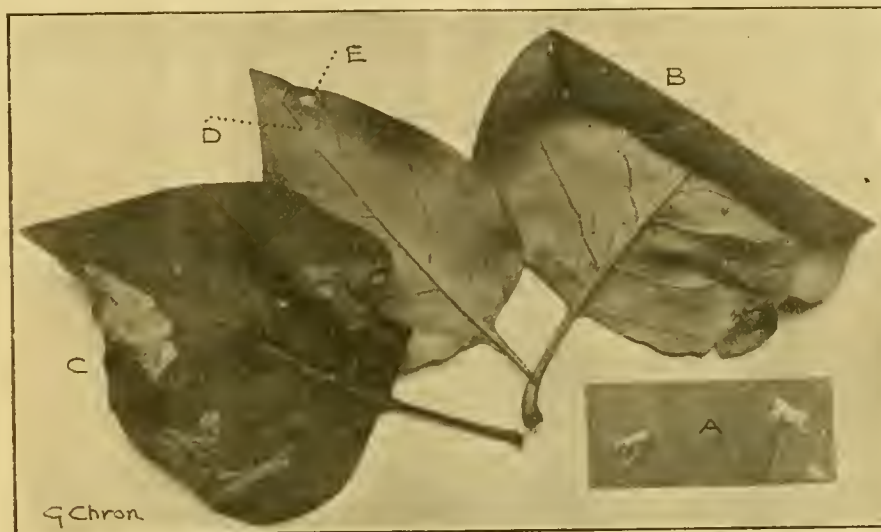


FIG. 117.—LILAC LEAF MINER MOTH (*GRACILARIA SYRINGELLA*).

A, Moths in leaf (natural size); B, Rolled leaf; C, Mined leaf; D, Young mine; E, some Tortrix eggs.

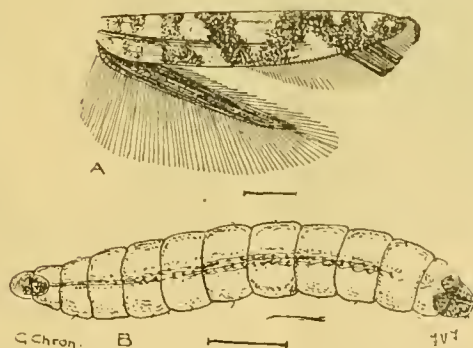


FIG. 118.

A, Wings of *Gracilaria syringella*.
B, Larva of *Gracilaria syringella*.
(Both magnified.)

occurs in Continental Europe. The appearance of the attacked leaves varies to some extent; the majority are blistered, a few rolled up at the tip; both these forms of damage occur on the Lilac and Privet. It also may be found on the Ash, but there rolls up the leaves only; at least I can find no record of blisters having been produced, nor have I been able to detect any. The blisters vary in size according to age, and also when mature; some I have found extending right across the leaves and 2 inches long. Now and again, two or more blisters amalgamate, and the whole leaf may become one blistered mass. At first the blisters are pale green, and later dull brown. On holding an attacked leaf up to the light, the larva may plainly be seen tunnelling in the parenchyma. There is no other insect which can be confused with this small Tineid, if we note the characteristic attack. The blisters formed by the first brood seem to be mostly on

so called tibiae of the front and mid legs brown, those of the hind greyish; fore and mid feet grey with a few brown specks, the hind ones whiter, also with brown spots. The mid tibiae much thickened with scales. The moths fly about sunset, and settle every now and then on the leaves, with their head and anterior part of the body raised, the anterior and middle legs stretched out in front, the hind placed against the sides of the abdomen, and the antennae either waving in the air or folded backwards. They shelter during the day, but fly out at once if the bush is shaken ever so gently. Two broods occur during the year, the first in May and June, the second at the end of July and in August. By far the greater number this year occurred in the first week in August, when they swarmed around some Lilac bushes kept under observation. Those kept in confinement lived for a few days, and readily copulated, remaining in copula some twelve to fourteen hours in two cases.

The first brood lay their eggs from the end of May well into June. The eggs are laid in clusters on the lilac leaves, usually on the upper surface; in a week they hatch, and the young caterpillars eat their way into the parenchyma, and at once commence to tunnel the leaf. As many as twelve larvae may be found in one blister. They seem to feed in an irregular manner, perhaps five or six together, and the others scattered about with no definite arrangement; hence the blisters become very diversified in form. On opening a small blister the little larvae may be seen clearly with a lens, and also by the unaided eye. They are at first almost transparent and glossy, but the green chlorophyll they have devoured shows through the transparent skin as a narrow median line. When mature they reach rather more than one-fourth of an inch in length, and

the brown head becomes prominent, and the whole glossy body may be tinged with green, with a median darker area; the segments are much indented. Some ten days before they become mature they leave the blister and crawl to the apex or side of the leaves, sometimes to new leaves, at other times remaining on the leaves they have blistered. They then roll the leaves up and feed upon the under epidermis and the parenchyma under shelter of the curled leaf; frequently half of a large lilac leaf is rolled over. I have noticed that the apex is attacked as a rule, but Stainton says the leaves are rolled laterally. After remaining some days in this house they reach maturity, and then leave the roll and its load of "frass" and crawl to some shelter in which they pupate; they usually retreat to the crevices of the older wood, or may even spin their opaque white cocoons in the axils of the leaves. The pupa stage lasts from ten to sixteen days, and the second brood

II.—THE LABURNUM LEAF-MINER.

(*Cemistoma laburnella*, Martini).

One frequently notices numerous round and irregular blisters on the Laburnum leaves. On opening one of these blisters during June, July, August, September, and October, we shall be sure to find a small caterpillar feeding within—the larva of the Tineid moth known as *Cemistoma laburnella*.

At first the blotches are pale-green, but they gradually become dull grey and are marked with dark concentric rings formed by the frass of the little caterpillar within. If we examine the leaves carefully we shall find previous to this a small pale, sinuous tunnel, which runs to this blotch. This is formed first of all by the larva. It will be noticed to run suddenly into the irregularly rounded blister, as shown in the illustration given at fig. 119. These mined areas may grow to the full extent of one of the leaflets, and as a

the laburnum leaves—Stainton says generally near a mid-rib, but this I have not noticed. The freshly hatched larvæ at once bore into the leaf and commence to mine it, at first forming a narrow tunnel and soon a small dark-green patch; this gradually increases and becomes paler and marked with crescentic dark lines composed of excrement, which becomes attached to the upper cuticle of the leaf. The larvæ are first found in the latter part of June and in July. When mature they are one-fourth of an inch long, pale greenish-white with bright-green dorsal vessel; head pale-grey, jaws brown; the second segment is paler than the rest and has two grey marks; legs grey. Like the preceding, the segments are deeply indented. On becoming mature, the larvæ crawl from the blisters and spin pure white cocoons attached to the leaves of the tree. The cocoons are pointed at each end. The second brood of moths come out at the end of July, August, and even in September, and the larvæ they produce are seen even as late as October. When full grown, this second brood of larvæ let themselves down from the leaves and spin up amongst the debris beneath the trees and on the stems, &c., where they remain hiding in crevices in the pupal stage all the winter.

It occurs not only in Britain, but also in Germany. It is especially abundant around London.

Treatment and prevention consist of removal of all matter beneath the trees in winter, burning it, and then dressing the stems with caustic alkali wash. No satisfactory remedy can be devised, as the larvæ feed entirely in the leaves. Young stock should not be planted near old Laburnum trees that are infested, and should be gone over in summer and all attacked leaves picked and destroyed. *Fred. V. Theobald.*



FIG 119.—LABURNUM LEAVES MINED BY *CEMIOSTOMA LABURNELLA*.
A, shows tunnels first formed by the larvæ; B, old blisters (slightly reduced).

then makes its appearance. The larvæ of the second brood this year had made perceptible blisters by the end of the first week in August, but only few in number; the moths swarmed in the second week, and from then onwards great numbers of blisters appeared. This second brood mature towards the middle and end of September, by which time all the larvæ have left the leaves and spun their cocoons, in which they remain enshrouded as pupæ all the winter. The pupa is rather long and slender, and very restless if touched.

I have never seen this insect in sufficient numbers in Ash or Privet to do any appreciable harm.

PREVENTION AND TREATMENT.

In gardens and nurseries it is advisable to pick off all blistered and rolled leaves and burn them, even when only a few are seen. Little else can be done, except washing masses of the stems with caustic alkali-wash in winter so as to well soak them. I have found in this way the delicate cocoons are damaged to such an extent that the pupæ are ruined.

result the leaves wither away. It is surprising how little these insects affect an old, well-established tree growing on suitable soil, but when it occurs on young stock and on trees growing in unfavourable places, it does much harm by checking growth, and is in any case a serious disfigurement in gardens and parks. Like the preceding miner it is always with us, but some years it increases in great numbers. The moth is a very beautiful insect, rather more than one-fourth of an inch across the expanded wings, of a brilliant white with some yellow marks near the apex of the fore-wings, a dull, purplish-brown spot and radiating dark lines on the cilia of the apex, the thorax white and also the head; the abdomen is grey.

The life-history and habits are very easily followed. The moths rest during the day under the leaves, on fences and on woodwork near the trees, usually on the lee side. They appear like the preceding insect, flying about sunset. There are two broods, the first appearing in May, the second in July and August.

The female lays her eggs on the under side of

NEW OR NOTEWORTHY PLANTS.

BULBOPHYLLUM GENTILII, ROLFE, *n.sp.**

An ally of *Bulbophyllum calamarium*, Lindley (*Botanical Magazine*, t. 4088), which was sent from the Congo district by M. Louis Gentil in 1898, and flowered at Kew in September, 1903. A fruiting specimen, collected at Bipinde, in the Cameroons (Zenker, n. 189), and distributed from Berlin under the name of *B. calamarium*, Lindl., now proves to be identical, though it was included under *B. calamarium* in the *Flora of Tropical Africa* (vii., p. 33), being inserted at the last moment before its differences had been detected. The two resemble each other closely in general appearance, but the present one has larger, more concave bracts, a shorter and broader lip, with shorter hairs, those on the under surface being strongly reflexed. The flowers now prove to be different in colour, the sepals being straw-coloured, margined and striped with dark purple, and somewhat blotched near the base with the same colour; the petals straw-coloured, tipped and margined with purple; the lip dark purple, and the column white, striped with purple on the face. *B. Schinzianum*, Kränzlin, is another ally.

* *Bulbophyllum Gentilii*, Rolfe.—Rhizomes stout, bearing broadly-oblong, tetragonal, monophyllous pseudobulbs, $\frac{3}{4}$ –1½ inch long. Leaves oblong, subobtusate, coriaceous, 3–7 inches long by 1–1½ inch broad. Scapes stout, 1–2 feet high, bearing six or seven short sheaths on the lower part; the spike dense, and strobiliform before flowering. Bracts elliptical-oblong, subacute, concave, imbricate, 10–12 lin. long. Pedicels 4–8 lin. long, and primrose-coloured, like the exterior of the sepals. Dorsal sepal oblong-lanceolate, acute, 4–5 lin. long; lateral pair linear, somewhat acuminate and falcate, 4–5 lin. long. Petals linear, acuminate, somewhat falcate, 2 lin. long. Lip entire, elliptical-oblong, obtuse, 3–4 lin. long, margin hairy, face smooth, under surface bearing numerous long reflexed purple hairs near the apex; disc bearing two obtuse keels. Column 1½ lin. long, teeth short, acute, and somewhat falcate. Capsules obovate-oblong, 9–10 lin. long. Native of W. Tropical Africa; Congo, Gentil; Cameroons, Zenker, #23; Preuss, 1225. *R. A. Rolfe.*

But according to the description it has minute side lobes to the lip, and hairs twice as long as the lip's breadth. The present species is a strong-growing plant, having stout rhizomes, tetraginous, oblong, monophyllous pseudo-bulbs; oblong, coriaceous leaves, reaching to 6 or 7 inches long, and a stout scape from 1 to 2 feet long. In the young state the raceme is strobiliform, with strongly imbricate bracts, from which the flowers are shortly exerted. The pedicels and buds are markedly pruinose. It succeeds on a block or in a basket in the Warm house. R. A. Rolfe.

FLORISTS' FLOWERS.

CARNATION "AMERICA."

Those who require an exceptionally bright-coloured Carnation for flowering in August and September should procure this Tree variety and grow it well. The flowers are of extra large size; they are heavily fringed, and the calyces do not split. The colour is rich scarlet and the flowers have a delightful perfume, which is exceptional. E. M.

CACTUS DAHLIAS.

The variety "Amos Perry" is a splendid acquisition; the colour is bright red, and the flower is very much superior in every way to that of the old "Starfish." The plants grow 4 feet high, have a good branching habit, and the flowers are borne in abundance on long stiff stems well above the foliage. It is an ideal variety. "Mrs. Edward Mawley" is the freest and best yellow-coloured variety. "Winsome" is a moderately good white variety; but there is need for a good white Cactus Dahlia having flowers of the excellent form of those of "Lord Roberts"; but those of Lord Roberts are produced on weak stems. Perhaps some Dahlia cultivator will give a list of the twelve best Cactus Dahlias, the six best Pompon varieties, and the six best single-flowered varieties. A. J., Essex.

FORESTRY.

We strongly commend to the notice of those interested in the management of woods a publication by Sir Harold G. Hewett, Bart., to be had from the Country Gentleman's Association, 2, Waterloo Place, Pall Mall. It is a small pamphlet mainly devoted to the exposition of the "new" scientific forestry as practised in Germany and France, as compared with the haphazard system followed here, because it is the practice handed down from our forefathers. Scientific cultivation, whether of trees or any other plants, is based on knowledge as exact and as complete as circumstances will allow. That knowledge cannot be attained from personal experience only, but is derived from careful records made by numerous observers over a series of years, and under diverse circumstances. Facts as represented in figures showing the concrete results attained by a multitude of trained observers are available, whereas the so-called "practical man" has only his own limited experience to depend upon. He has to rely upon general impressions rather than on exact data, and the slightest change of circumstances is calculated to disturb his impressions and render them faulty. The author of the pamphlet before us hardly seems to us to take into sufficient consideration that our woods and forests are, as a rule, not state property. One proprietor may manage his woods to advantage, while his successor may neglect them utterly, so that no continuity of practice exists. Again, the question of rabbits and of game, and the revenues derived from letting the "shooting," are not taken into consideration.

The writer is strong in his advocacy of Continental methods, and is equally firm in his denunciation of the old system. He weakens his case by the omission of reference to the circumstances we have mentioned, and does not strengthen it when he makes what is surely an exaggerated statement, that "not one in a hundred of our landowners, agents, writers, or journalists is aware of the existence of the Continental Schools of Forestry."

In any case this introduction to the study of Forestry in Britain is likely to be very useful, as giving in very small compass an idea of what Continental forestry really is, and of the methods by which it is practised. Schlich's Manual is of course the book of reference in this country; but it needs for its due appreciation some more elementary treatise for the benefit of novices and for the instruction of those who have not had the advantage of scientific training. Sir Harold Hewett's Introduction will, as we have said, be most useful from this point of view.

ORCHID NOTES AND GLEANINGS.

CATTLEYA × MRS. KATE NYE (GASKELLIANA × MARY GRATRIN).

A VERY handsome inflorescence of three brightly-coloured flowers is sent by Mr. W. G. Bailey, gr. to H. Nye, Esq., Broadwater Manor, Worthing. The parentage of C. × Mary Gratrix is C. Loddigesii Harrisoniae × C. granulosa Schofieldiana. In the beautiful resultant hybrid, C. Loddigesii exhibits itself strongly, but C. granulosa is difficult to trace except in the rugged yellow lines in the lip and a slight separation of the front and side lobes.

The sepals and petals extend over 6 inches from tip to tip. They are of a bright purplish-rose. The labellum is white tinged with lilac on the side lobes and base, and yellow in the middle portion. The margin is crimped, and there is a slight purple tinge in front. It resembles in general appearance C. × Minucia (Loddigesii × Warszewiczii), but is much finer.

MILTONIA HYBRIDS.

Considerable importations of Miltonias have been made from Brazil during the last few years, and annually a crop of natural hybrids appear. During the past week flowers of several hybrids of M. Regnellii have been sent. One of the finest was—

Miltonia × *Cogniauxia* (Regnellii × *spectabilis* Moreliana), sent by Mr. A. Player, Bycullah Park, Enfield, who states that his plant had three spikes. The flowers are very suggestive of those of M. *spectabilis* Moreliana, but the sepals and petals are narrower and more acute. The flowers are dark purple, the blade of the lip rose-colour.

Miltonia × *Binoti* (candida × Regnellii) is sent by Mr. A. G. Murrell, Bournemouth, in two forms, the smaller having a nearer resemblance to M. *candida* in the labellum than the larger, which has a flat labellum as in M. Regnellii. The sepals and petals are light-yellow, with broad irregular bars of cinnamon-brown. A remarkably fine form of M. × Binoti is flowering with C. B. Gabriel, Esq., Easdale, Horsell, near Worthing. All the segments are broad and of good substance, and the colouring very bright.

M. *Blunti* *Petersiana* (Clowesii × *spectabilis* Moreliana) is sent by Mr. H. A. Tracy, Twickenham. The flowers are much brighter in colour than those of the original form, and they are produced several on an inflorescence. The evidence of M. *spectabilis* Moreliana in its composition is given by the bright reddish-purple tint of its markings. In several collections Miltonias seem to thrive in a cool intermediate house. J. O'B.

TREES AND SHRUBS.

POPULUS MONILIFERA.

We have had occasion to note the fine specimen of this tree in the botanic garden at Dijon. Another fine specimen may be seen in the petite Hotoie at Amiens. Larger trees of the same kind may be seen, but this one is remarkable for the height and size of its unbranched bole, which, roughly measured, indicated a circumference at breast height of 16 feet.

ACER ERIOCARPUM.

We have frequently had occasion to mention this as one of the best and most elegant trees for planting in towns, but we never saw a tree of the kind of such proportions as one on the ramparts at Ypres, where also other fine specimens of uncommon trees may be found.

THE CHESTERS.

CHESTERS, the beautifully-situated residence of Mrs. N. G. Clayton, lies in the picturesque valley of the North Tyne, closely adjacent to the old-world village of Humshaugh, and distant some four miles from the ancient and historic market town of Hexham, in Northumberland. Chesters mansion was entirely rebuilt some years ago by the late Nathaniel George Clayton, Esq., and now forms an edifice of considerable architectural pretension, which has a commanding aspect. From the front of the Hall the eye travels over an extensive sweep of the wide-spreading park, which stretches away to the charmingly-wooded banks of the North Tyne. In this park are found the remains of the Roman camp of Cilurnum, extensive excavations having brought to light remains of great antiquarian interest and in a high state of preservation. The celebrated old Roman wall runs in a direct line through the Chesters grounds. The object of this article, however, is not to describe the Roman wall or Roman remains, but the gardens, famous in the North for their extent and beauty.

A broad terrace of crescent shape, with croquet lawns at the foot, extends the entire length of the front of the Hall. The borders, which are laid out along this terrace, are filled with Begonias, Calceolaria amplexicaulis (a very old but extremely useful bedding Calceolaria, now seldom seen), Pelargoniums, Verbenas, Violas, &c.

In the wide border to the east a striking effect was produced at the time of my visit by its being planted with a groundwork of Heliotrope, having a serpentine of Pentstemons running through the centre, the outer edge being formed of choice varieties of Violas. Among the named Violas, which are grown in great profusion at Chesters, a large, beautifully-bright canary-yellow variety named Bute Yellow is particularly conspicuous. This variety was raised by Mr. Alex. Lister, of Rothesay; it is very free-flowering, of dwarf habit, and admirably adapted for edging purposes.

The entire length of the front of the Hall is occupied by a wide border, in which a row of Lavender was planted, backed up by a row of dark-foliaged China Roses. The object here was twofold—namely, to obtain colour and perfume; and this object was most decidedly attained, as the blend of colouring and the delicious perfume emitted by both Roses and Lavender were exquisite. Groups of dwarf evergreen flowering shrubs, such as Arbutus Unedo, Escallonia macrantha, Pernettya hybrida, Irish Heaths, Veronica buxifolia, Rosa Wichuriana, &c., were distributed with charming effect throughout this border.

The walls of the Hall are clad with a variety of climbing plants, such as Ceanothus Gloire de

Versailles, *Wistaria sinensis*, *Clematis montana*, *Thermopsis laburnifolia*, *Carpenteria californica*, *Clematis* in variety, *Magnolia grandiflora*, climbing Roses, &c. Noteworthy is a *Maréchal Niel* Rose, which is growing very vigorously and flowers abundantly without protection.

An extremely picturesque view commanding a portion of the Park and the Valley of the North Tyne is obtained from the drawing-room windows through a narrow glade bordered on each side by choice Conifers, flowering shrubs, Hollies, &c. From the north-west façade the visitor overlooks the herbaceous border. Beeches and other trees of enormous dimensions shelter the back of the Hall.

The border of herbaceous plants is a double one, with a grass path running through the centre, and is 200 yards long. The grass path is 11 feet wide, with a 16-foot border on either side. A background to one of the borders is formed by a row of rustic poles, furnished with climbing Roses. The herbaceous plants in the borders are numbered, raised zinc labels being used for this purpose, and a register is kept in which all numbers are noted with corresponding name of plant, colour of blooms, height, and time of flowering. In spring and early summer this border presents a charming appearance, being then entirely filled with *Narcissus*, *Crocus*, *Daffodils*, *Tulips*, &c.

Halfway along the herbaceous border a wide path leads off at right angles into the Rose and flower-garden. A wide centre walk 60 yards long, bordered on each side by herbaceous plants, bedding plants, annuals, and bulbs, divides the flower-garden from the Rose-garden, and the beauty of the scene is enhanced by a pergola of climbing Roses, *Wistarias*, *Clematis*, *Vitis Coignetæ*, &c., producing a glorious effect when in full bloom.

THE ROSE GARDEN

is laid out in beds, each of which is edged with *Saxifraga umbrosa* (London Pride). There are forty square beds, with a large round bed in the centre of the garden. Each bed contains one variety of Rose only, selected and planted in such a way that the outer beds contain dark sorts, while the inner ones are filled with Roses of a lighter shade, gradually shading off to pure white in the centre bed. A mixed border of Roses, chiefly for cutting purposes, runs along the lower part of the Rose-garden. Altogether some 1,500 Roses are used to furnish this garden, and the delightful scene and glorious perfume produced when in full bloom may be better imagined than described.

THE FLOWER GARDEN

forms a very attractive and conspicuous item. It is laid out in a symmetrical design of beds of various shapes, bordered by dwarf Box-edging, and divided by narrow gravel paths. Each bed was filled with only one or two varieties of plants. The beds which on my visit particularly attracted my attention were the following:—pink Ivy-leaved *Pelargoniums* interspersed with blue *Salvia*, white *Verbena* mixed with *Lobelia cardinalis*, white *Lobelia* with *Calceolaria amplexicaulis*, dwarf *Petunias* with *Fuchsia Riccartoni*, *Verbena* Miss Willmott edged with white *Lobelia*, dwarf white *Antirrhinum* with dark blue *Lobelia*, &c. Suitable combinations of colour have been kept particularly in view and successfully carried out. In spring all the beds are filled with *Tulips*, *Hyacinths*, and *Myosotis* principally.

On the old brick wall bordering the Rose-garden a very pretty effect is produced by a little alpine, *Erinus alpinus*, which has established itself in the mortar between the bricks, and thrives there luxuriantly as in its native haunts.

The present Rose and flower-garden used to be all kitchen-garden, but a few years ago a new

kitchen-garden, $3\frac{1}{2}$ acres in extent and walled in on three sides, was formed some considerable distance away in an open field. Thus the strictly useful is now kept separate from the beautiful and ornamental.

Last year an artificial lake was added to the pleasure grounds, for growing aquatics, especially Water-Lilies, of which a fine collection has been planted. Recently, also, fully an acre of ground was taken in from the park, on which thousands upon thousands of bulbs were planted, and which are now grown on the so-called "wild system." The bulbs include *Crocus*, *Daffodils*, *Narcissus*, *Scillas*, &c.

THE GLASSHOUSES.

The greater number of these are dedicated to fruit-growing at present, though in autumn and winter enormous quantities of flowers and foliage plants are produced for the use of the rooms, table decoration being carried out on a most extensive scale at Chesters.

At the south end of the flower garden the visitor enters a range of half-span glasshouses, the first of which is the late Peach-house. The fruit from this house ripens with the late Grapes in September. The varieties of Peaches grown here are Late Admirable, Walburton Admirable, and Barrington. The next section constitutes a Rose-house, with climbing Roses against the roof, such as W. A. Richardson, Papa Gauthier, *Maréchal Niel*, Kaiserin Wilhelmina, &c., while the staging in winter is occupied by a choice collection of Pot Roses for cutting in February and March.

The third and last section constitutes a Peach-house, the fruit of which ripens with the Muscat Grapes in August. The varieties of Peaches grown here are Walburton Admirable, Stirling Castle, Royal George, Princess Louise. The last-named is an excellent Peach, both as regards flavour and cropping quality; unfortunately however it is not of a very attractive appearance owing to its being rather pale in colour. A splendid batch of 300 pots of *Malmaison* Carnations in all the best varieties were growing in the Rose-house. The length of these three houses is 57 yards by 14 feet in width. The back walls are covered with Nectarines.

The two early Peach-houses and two early Vineries (Black Hamburg) to which we come next, have been in use during June and July, and were still carrying a large crop.

An excellent range of heated pits 120 yards long was filled with *Pelargoniums*, *Begonias*, and *Mignonette*, &c., intended for late flowering. In spring these pits are filled with Violets, of which large quantities are used.

The late vinery, 38 feet by 20 feet, is filled with the following varieties: Muscat Hamburg, Madresfield Court, Black Hamburg. From the late vinery we enter into the Muscat-house, which is entirely devoted to Muscat of Alexandria, and the sight of this house repays the visitor for any trouble he may have experienced in reaching Chesters. The crop is excellent, the bunches are of great size and perfect shape, and never has it been my privilege to see better and larger individual berries. Two vineries, 38 feet by 15 feet, filled entirely with Black Hamburg, produce the late and intermediate Grape crops.

The early Peach-house, to which we come next, contains the varieties Royal George, Early Waterloo, and Stirling Castle against the roof, while the wall is covered with Noblesse. Noblesse is a splendid cropper, producing fine, lusciously-flavoured fruit. The next house carries Red Magdalen and Dr. Hogg. Red Magdalen is a Peach of enormous size and weight. Mr. James Cocker, head gardener to Mrs. Clayton, last season gathered, among a quantity of exceptionally large fruit, one Peach which weighed $13\frac{1}{2}$ oz., while it measured 12 inches in circumference. It

is a good-flavoured Peach, which however only colours to the sun, and therefore when grown against the roof is rather pale in colour, owing to the foliage obstructing the immediate action of the sun's rays.

The first range of plant-houses is a span-roofed house, 110 feet long, divided into four sections of different temperatures. The first section contained "*Malmaison*" Carnations and a few Tree-Carnations. Among the *Malmaisons* I noted such varieties as Calypso, H. J. Jones, Lady Grimstone, Prime Minister, Churchwarden, Princess of Wales, &c. The next section contained a mixed assortment of plants, including fine specimens of *Clerodendron fallax*. One side of the third section is used for growing Melons, while on the opposite stage Crotons, Dracenas, and Pandanus are grown. The roof of this section is covered by *Stephanotis floribunda*. The Crotons were of splendid colour. The fourth section contained a vigorous and healthy-looking batch of *Gardenias* and *Ixora Williamsii*, edged with *Panicum variegatum*. The Melon-houses produce two crops annually.

A large span-roofed conservatory, 38 feet by 20 feet, is the next house to be noted. A gorgeous mass of bloom met the eye on entering, while large baskets filled with choice plants hung in profusion from the roof, lending to the whole a charming effect. Against the roof itself a greenhouse climber, *Rhodochiton volubile*, is grown. This is a great favourite at Chesters for table decoration, to which its graceful sprays of red flowers and dark foliage lend themselves admirably.

The conservatory is connected with the Palm-house by a range of two smaller houses, one of which is used as an Orchid-house; the other was filled with a mixed collection of *Gloxinias*, *Caladiums*, &c., interspersed with *Adiantum cuneatum*. Seldom does one see Maidenhair Fern in better colour than those at Chesters. The two last-named houses are 40 feet in length by 14 feet wide.

The Palm-house is of the same size as the conservatory. Palms of rare size and beauty are artistically arranged on the centre stage, and each plant is a perfect specimen. The roof of this house is covered with *Allamandas* in variety, *Bougainvilleas*, &c. Conspicuous for its size and perfection is a magnificent specimen of *Cycas circinalis*, with fronds from 15 to 20 feet long. Other Palms were principally *Kentia Fosteriana*, *K. Belmoreana*, *Areca lutescens*, &c. The condition these plants were in is the more remarkable seeing that they are continually used to decorate the lofty rooms and halls of Chesters mansion. The fine specimen Ferns demand notice. Among them are *Davallia plumosa gigantea*, 24 feet in circumference; *Adiantum Gaskellianum*, a glorious specimen, in 24-inch pot; *Davallia Mooreana* in tub; *Goniophlebium sub-auriculatum*, with its narrow veined fronds, 8 to 10 feet long. A fine collection of *Anthuriums* is grown here, among them being large specimens of *Anthurium Lingii* with its pure white spadix.

In the propagating-house was a very healthy and bright-looking lot of *Calanthe Veitchii* and *C. oculata* in 6-inch pots. The plants are about 200 in number; not a spotted leaf was to be seen, but all were clean and bright in colour of foliage.

Mention must further be made of some ranges of cold and heated pits for early forcing work, but which were filled with some 600 strong plants of *Begonia Gloire de Lorraine*, 200 pots of *Lilium lancifolium roseum* and album, and a number of *Primulas* and *Cinerarias*.

A number of *Camellias* having grown too large to be accommodated under glass were plunged out in the open some three years ago, where they are now growing unprotected and

producing an abundant crop of blooms each spring, and withstanding the rigours of our northern winters. About 900 Chrysanthemums are grown mostly on single stems, although some 350 are cultivated on the bush system.

Much credit is certainly due to Mr. James Cocker, the head-gardener, for the beautiful order and for the high state of cultivation to which everything has been brought. Mr. Cocker has occupied his position at Chesters for a number of years, and is an able member of his profession. S. P.

partial or wholly resting state, have concentric rings just below the bulbs, descend very distinctly, notably bulbous Irids, nearly all Amaryllids, Brodiaea, and Milla, and Liliums of the American group, the roots contracting just after the fullest growth is made, and the bulbs are drawn downward as a consequence. Furthermore, bulbs from extremely dry regions, particularly mountainous ones, are drawn downward at a rapid rate. Two inches per annum is about the average for *Elisena longipetala*; *Ismene*, the deciduous *Hymenocallis*, somewhat less; *Crinum* when

established about an inch, *Narcissus* and the finer-rooted subjects least of all this section. All these descend permanently.

In the Liliaceæ a different method is followed; the roots of these plants are not so strong, and the majority are merely fibres and of annual duration. Bulbs bearing such roots elongate themselves, as in *Scilla*, *Chionodoxa*, *Camassia*, *Calochortus*, *Erythronium*, often in the case of *Camassias* and *Scilla* forming a slender tube 6 to 10 inches long, in place of the usual round bulb. In *Tulipa* the familiar "dropper" serves instead; in *Ixiolirion* a kind of thrust tube with a young bulb at the one extremity, and a shell of the older one at the other. Isolated instances occur in *Crocus* of the *Imperati* type, whose "store" roots are contractile; *Fritillarias* of the *Meleagris* type, and especially *F. pluriflora*, which elongate their scales, some resembling shuttlecocks in outline, with the growing bud at the thinnest extremity. *Iris orchoides* descends in poor and harsh soils, but remains stationary under good cultivation. The only conclusion that can be drawn from such a common habit is that bulbs adapt themselves to the conditions of cultivation so far as they can, but strive to correct conditions that are intolerable. Tulip-growers know full well that one field may give a heavy percentage of "dropper" bulbs, whilst those in an adjoining field may remain normal. The "dropper" crop will increase year after year till a small percentage of normal bulbs remains.

Gardeners who notice that their bulbs have a marked tendency to descend will do well to plant deeply; but careful observation is necessary, for the habit may be fixed by long usage in the case of a few species, whereas others may find it necessary in one or two seasons and not in others, or in one part of the garden, remaining at a normal depth in another. Again, a particular bulb may descend 3 to 4 inches in the case of *Scilla*, and its neighbour, only 2 inches distant, may be normal and remain thus. G. B. M.



FIG. 120.—"HEDGE" OF NORTHERN STAR POTATO 5½ FEET HIGH AND 3½ FEET WIDE.

"HEDGE" OF POTATOS.

THE following letter from Mr. Edmund Bland, St. Louis Villa, Fordham Soham, is interesting even in these days of "express Potato culture."

"I have sent you two photographs of Northern Star Potato forming a hedge 14 feet in length, 5 feet 6 inches in height, and 3 feet 6 inches in width. The whole (see fig. 120) has been produced from one tuber which had ten eyes, and from which we obtained ten plants. My object was to keep them erect by placing some canes and string each side of the row. They have not been afforded any stimulants or any kind of manure, but we have given them clean well-water. The crop has been lifted (see fig. 121), and amounts to one bushel, and 273 small tubers which are large enough for 'seed' (sets)."

BULB GARDEN.

DEEP PLANTING OF BULBS.

THE discussion on this subject is of exceptional interest to me, having long ago remarked the greater strength of bulbs that have descended deeper into the soil of their own accord, and there cannot be any doubt that our regulation "depth to plant" is faulty in some respects, though often convenient and safe in practice. Bulbs descend into the soil habitually in a wild state, and with a definite purpose. Some adopt one method, some another, according to their particular rooting system. I have noticed that all bulbs having thickened roots, which, when in a



FIG. 121.—PRODUCE OF "HEDGE" OF POTATOS, SHOWN IN FIG. 120.

VEGETABLES.

POTATO "EVERGOOD."

WE have lifted our first crop of Potato "Evergood," and are more than surprised with the results. The crop is the finest I have ever seen, entirely free from disease and very heavy. One root in particular claimed my special notice, and on being weighed was found to consist of 9½ lb. of good tubers. The plants have not been afforded special treatment in the way of applications of artificial manure. The soil is a heavy loam. T. W. Brooks, Seedsman and Florist, Lichfield and Walsall.

COMPARATIVE YIELDS FROM NEW VARIETIES OF POTATOS.

Mr. Reading, gardener at Ashdell, Alton, Hants, who purchased seed tubers of several varieties from Messrs. Dobbie & Co. last spring, has sent the following particulars to the firm in respect to the yields obtained from the different varieties. These have been obligingly forwarded to us:—

	Seed tubers.	Yield of tubers.
"The Factor" ...	7½ lb.	200 lb.
"Evergood" ...	3½ lb.	119 lb.
"King Edward VII." ...	3½ lb.	103 lb.
"Northern Star" ...	2 lb.	138 lb.
Total ...	12½ lb.	560 lb.

POTATO "NORTHERN STAR."

After the glowing accounts given of "Northern Star" Potato last season, I think it would be interesting to many of your readers to know the results I have obtained this year. In this locality the variety is far from being satisfactory. In every case second growth (super-tuberation) set

in early, and every plant is a mass of fibre and long strings of small tubers. I enclose a photograph showing a fair sample of our crop, and I know of many similar cases. "Northern Star" and Evergood were planted side by side, and the latter variety turned out exceedingly good. J. B., Sussex.

— While on a visit recently to Seaton in Devonshire I had the pleasure of inspecting a small plot of Northern Star Potatoes growing on maiden soil. My friend, Mr. W. Gould, had already lifted one plant of Potatoes which had 123 tubers, weighing altogether 13½ lb. Three other roots which were lifted in my presence yielded 77, 98, and 99 tubers respectively. I have since heard from Mr. Gould that he has lifted altogether 722½ lb. of tubers, this being the produce of 7 lb. of "seed." It will perhaps be interesting to your readers to know of the method my friend adopted to obtain this exceptional crop.

The ground was ploughed and afterwards thoroughly broken up. Six weeks before planting a liberal dressing of fresh lime was given. The sets were cut into sections containing one or more eyes as the case may be, and as many "sets" as possible were made from each tuber. After taking out a spit of soil with a spade, a slight sprinkling of burnt earth was placed in the bottom of the hole, then a small quantity of chaff, on which was placed the "set." The usual means of covering in were employed. The rows were 3 feet apart from each other, and about a distance of 2 feet was allowed from "set" to "set." *Frederick C. Legge, The Gardens, Putteson Court, Nutfield, Surrey.*

SEEDLING POTATOS AT READING.

This season Messrs. Sutton put out some 500 seedling plants, raised from seeds the product of several diverse crosses, including Woodstock Kidney and Discovery, Flourball and Satisfaction, Woodstock Kidney and Up-to-Date, and others, but these were the chief crosses. All were grown under ordinary field conditions, in rows 3 feet apart, and the plants 18 inches apart. Having been raised under glass and set singly into 5 inch pots, the plants were fairly strong when put out. Whilst top growth greatly varied, as was inevitable, yet in most cases it was very sturdy and robust, the stems ultimately near the soil becoming stout and very woody.

The lifting to test cropping qualities took place on the 7th inst., in the presence of Mr. C. Foster, of the Reading College Gardens, and myself, and a most interesting sight it was. Here were scores of plants raised from tiny seeds, not tubers, giving crops of from thirty to seventy good, productive tubers, and in one case there were no fewer than eighty-two. In many cases there were good ware tubers, clean and handsome. That from out of this great batch will come some rivals to the "Stars" of the North there can be no doubt. *A. D.*

COLONIAL NOTES.

"SOUTH AFRICAN FARMERS' JOURNAL."

UNDER this title the first number of a monthly journal devoted to agriculture has been issued. It is written partly in English, partly in Dutch, and will doubtless render service to the farming community of South Africa. The office is at 84, Shortmarket Street, Cape Town.

WIND-BREAKS IN THE WEST INDIES.

Two trees are specially recommended in the *Agricultural News* for this purpose—"Galba," or *Calophyllum Calaba*, and for more moist situations *Inga laurina*. Protection of this kind is strongly advocated in the cases of the culture of Limes, Cacao, and Coffee.

The Week's Work.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Fuchsias.—Cuttings may be inserted at the present time to form good shapely specimens, which will flower during June and July next. Soft young shoots must be selected, such as those which may be found at this season on plants which have been planted out, and cuttings made from these will make roots readily. Let the cuttings be placed singly in small pots, and when sufficiently rooted let them be transferred to others a size or two larger. The subsequent treatment consists in keeping the plants steadily growing in a temperature of 50° to 55°, shifting them into larger pots as often as necessary, and keeping them near to the light. By June the plants should be nice pyramids from 3 to 3½ feet high, and in 9-inch pots. The leader should not be "stopped." Well-grown plants will be sufficiently bushy without "stopping."

Anthurium Scherzerianum.—These plants will have finished their growth and may be placed at the cool end of the stove, or in an intermediate-house where a temperature of 55° is maintained. While the plants are in this temperature the quantity of water afforded to the roots should be reduced.

Plant-houses.—With the approach of dull, sunless weather comes the necessity of taking steps to ensure that the conditions are as favourable as possible to the occupants of the plant-houses. To this end an effort should be made to cleanse the glass and woodwork of at least those houses where the plants are in active growth. All whitewash remaining on the glass should be cleaned off, and canvas blinds not required to be left on for the protection of the houses during severe weather should be taken down, and, after being thoroughly dried, stored for the winter. The cleansing of the interior of the plant-houses will provide profitable employment for men during wet weather, and work of this kind is usually deferred until such an opportunity presents itself; but the cleaning of the outside of the glass should be undertaken with as little delay as possible.

Stock Princess Alice.—Where seeds were sown at the end of June and the seedlings afforded the treatment I have recommended, the plants will now be commencing to flower. They must be kept growing, and be given a position near to the light. A temperature of from 50° to 55° will be suitable. Occasional applications of liquid manure in a weak state should be given.

Kalanchoe flammula and *K. Kirkii*.—Seedlings raised from seed sown in the spring should now be potted into 4-inch pots if this has not already been done. The plants may be allowed to winter in these pots, transferring them to 5 or 6-inch pots about the end of February. The compost may consist of three parts loam and one part leaf-soil, together with sufficient coarse silver sand and broken brick rubble to keep the soil thoroughly porous. Young plants raised from shoots and leaves inserted after the old plants ceased flowering should also be placed in 4-inch pots for the winter. A minimum temperature of between 50° and 55° will be suitable.

Ferns.—Plants which have been growing in a close and moist atmosphere for the purpose of providing fronds for cutting should be afforded more air and light as soon as the growth is completed, in order to harden the fronds, otherwise when cut they will quickly wither. A better plan when plants are required for this purpose is to grow them in a moderately cool house, which is not too heavily shaded. The fronds of *Adiantums* grown under these conditions are of a much firmer texture, while the colour is of a softer shade of green.

Tree or Winter-flowering Carnations.—Afford these a temperature of about 55°, with the exception perhaps of the variety Mrs. Brooks, which appears to produce better flowers when the plants are grown in a temperature of from 45° to 50°.

Attend regularly to disbudding; it is a great waste of the plant's strength to allow the superfluous flower-buds to attain considerable size before removing them. Occasional applications of weak liquid-manure will be beneficial. Weakly plants, and plants bearing a full crop of flowers, may be greatly assisted by applications of Bentley's Carnation-manure. Keep a sharp lookout for red-spider, and if the plants are attacked by them spray the foliage several times with "spidacide" at intervals of two days.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

Peas.—Where early sowings are to be made out-of-doors, have the ground thoroughly prepared for them at once, so that the air and possible frosts may make the soil in good condition before it is time to sow the seeds. This turning up of the ground now is of the greatest importance on heavy soil, for if it be left until it is required for sowing, it will be found almost impossible to get sufficient fine soil to cover the seeds. Commence by clearing the surface of the ground of any rough material that is likely to be harbouring slugs or other insect pests which would interfere with the crop, and apply sufficient soot or lime directly afterwards to kill any that remain. Next afford the ground a good dressing of manure, and dig or trench this in as may be required, but in either case turn up the soil as roughly as possible, so as to expose it to the frost, the action of which will make it crumble into fine mould. After this has been done give two or three more dressings of soot or lime previous to sowing the seeds: such a dressing of the ground when it is unoccupied will be found the best means of exterminating insect pests, for strong measures may then be taken without fear of causing injury to growing crops. It is much better to commence with clean ground than to have to do battle for months owing to the neglect of precautions that might have been taken.

Broad Beans.—Prepare ground for these in the same manner as for Peas. In most soils and localities Broad Beans pass through the winter without injury if they are protected from slugs, which otherwise will eat their way into the stems under the ground and cause the plants to die off at the collar.

Cauliflowers.—Those which are becoming fit for use must be afforded protection, or in the event of frost occurring, the "heads" may be damaged. Lift those plants that are most advanced, and place them closely together in frames, or in some sheltered corner where mats or other material can be placed over them when required. By merely turning the leaves over the "flower" a little protection may be provided against slight frosts. Be prepared with means for affording protection to young seedling plants.

General Work.—Weeds, which this season have been very troublesome, keep coming forward in quick succession. Groundsel, which has not previously given much work here, is now growing vigorously, and every opportunity must be taken to clear it off before the seeds ripen. Garden-paths are apt to become green in the autumn, therefore use the hoe upon them at every favourable opportunity.

Vegetable Marrows.—Cut all the Marrows that are fit for table and take them indoors, unless there are ample means for protecting them from frost in the position in which they are growing.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Second early and mid-season Peaches.—These trees are now in the most favourable condition for lifting. If this is considered necessary, owing to the trees having grown too vigorously, or to the condition of the borders being unsatisfactory, let the work be done at once if the necessary materials are in readiness. These will include material for drainage, good fibrous loam, old mortar-rubble, half-inch bones, charcoal, and

wood-ashes. Make the compost perfectly firm when replanting, and use no manure except upon the surface of the ground. Shorten all the strong roots, and keep the others well up to the surface. When the work has been finished, afford the roots a good watering, and the trees will soon re-establish themselves. When the leaves have fallen attention will be necessary to the work of cleaning and pruning. If any of the borders are in a wet, sour condition, and complete renovation is not contemplated, apply a good dressing of air-slaked lime upon the surface, and lightly water this into the soil. Under no conditions must the trees be allowed to become dry at the roots. To secure perfect rest to the trees afford all the ventilation possible, this will have a very good effect upon them.

Fig-trees in Pots intended to supply ripe fruits at the end of April or early in May, the shoots of which were stopped during the growing season, should be cleaned carefully, as previously advised, so as not to injure the young fruits nor the points of the shoots. The house will need to be closed early in November, at which time the trees should be syringed frequently, but no fire-heat must be employed until later. If a mild bottom-heat can be provided by the use of Oak or Beech-leaves and a little stable-litter, about 3 feet in depth, made firm, to avoid overheating, the advantage will be considerable. But under no circumstances must the heat be anything but moderate. The soil in the pots must be kept in a moist condition.

Fig Trees in Borders.—If any of these trees are expected to ripen fruits in May, the house must be closed at about the same time as is advised above for trees in pots. It is necessary to have the roots well under control, and in cases where the roots are not restricted to a certain area, the trees should be allowed unlimited space on the trellis for the extension of growth. If any of the trees are growing too strongly the roots may be pruned, remembering that severe pruning of the branches will only tend to make the trees more unfruitful. Let the surface-dressing consist of fresh loam and bone-meal, and afford a mulch of prepared droppings from the stable. Ventilate the house freely until closing time each day, but exclude frost.

Strawberries in Pots.—Maintain a free circulation of air in the house, and in order to dispel damp employ sufficient fire-heat to secure a minimum temperature of 50° to 55°, and a maximum of 10° or 15° higher. The plants should be on shelves near to the glass.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Flower Beds.—Clear away Pelargoniums and other flowering plants as soon as they have ceased to have a good effect. Dig up the beds and prepare them for bulbs as was advised in a former Calendar, taking care to remove all the roots of the plants now growing in the beds, also any crows and rubbish that may be seen. The bulbs should be planted when the soil is moderately dry, and it will be the better for being made moderately firm before the holes are made, because the soil will not be so likely to crumble into them. One variety of bulb in a bed is preferable to mixing several together. It is unimportant whether sand is used or not, provided the ground has been made into good condition for the growth of bulbous plants. The implement used for making the necessary holes should be flat at the bottom, and of sufficient circumference that the bulbs may be placed at the bottom of the holes, so that the base of each bulb may rest on solid earth. The bulbs of Hyacinths, &c., may be planted 6 to 8 inches apart. Work some of the finest soil into the holes, but do not rake the ground over after the holes have been filled in, as the Pansies and Violas that are to be planted between them can be more evenly placed between the bulbs if the holes remain apparent. Such plants may be put out directly the bulbs have been planted, and they will then become established in the soil before winter. Other bulbs,

such as Narcissus, Snowdrops, Crocus, Aconites, &c., should be got in at once if any remain unplanted. Bulbs that are established in the soil and are growing in a dry situation should be afforded a little artificial manure and a good soaking with water.

Deciduous Trees and Flowering Shrubs.—The recent heavy rains having reached the roots of these trees, the work of planting and replanting is being done at the present time. Flowering shrubs should be planted in groups of three or more of one variety together, as they have a better effect when so planted. If the shrubs to be moved have not been moved for some years extra care will be necessary to save all the roots possible. The tops may be lightened if desired by cutting one or two branches away entirely; this may give them a better chance of growing. If the heads are very large they will require to be afforded some support against the wind. Do not apply a mulch until the rains have soaked the roots thoroughly.

Lawns.—These may now be examined and the weeds removed. Large "plantains" can be taken out by means of a two-forked weed-hook. Choose a dry day for this work, and put a little lawn-sand on each of the Daisies. If the lawns are required for tennis-players early in the spring, there would not be time for the grass to get over such an application of lawn-sand, therefore it is necessary to do the work in autumn, even if it necessitates an extra application of "sand." If the weather is wet, apply a good dressing of short manure or horse-droppings over the grass; and if the removal of weeds causes very large holes, fill them up with rich soil and make the whole of the surface level with the roller.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Sophrontitis grandiflora, *S. g. rosea*, and *S. Rossiteriana*, inmates of the cool-house, are now growing freely. The plants should be kept at the warmer end of the house, and be so arranged as to obtain the maximum of light and plenty of fresh air, but without draught. Many beautiful and interesting crosses have been obtained from *S. grandiflora* crossed with other distinct species, and the hybrids thus raised are possessed of such vigour and free-flowering qualities that they deserve to occupy a prominent place in the best Orchid collections. At this season some of these hybrids, as *Sophrontitis Chamberlainiana*, *S.-C. Calypso*, *S.-C. Marriottiana*, *S.-C. Nydia*, *S.-C. eximia*, *Sophrontitis heatonensis*, *S.-L. Marriottiana*, and *S.-L. Eros* are in flower. Others are in full growth, and flower-buds can easily be discerned pushing up in conjunction with the new shoots. The plants should be suspended near to the roof-glass on the lightest side of the intermediate-house, where the sunlight will tend to intensify the colour of the flowers. The *Sophrontitis* and the hybrids enumerated will need moderate supplies of water until the flowering season has past and the new pseudo-bulbs are fully made up. Afterwards the amount should be gradually lessened, and the plants given as long a rest as is possible. While at rest they will require water occasionally to preserve the leaves and growths in a fresh and plump condition. *Epiphrontitis* × *Veitchii* is a lovely hybrid which blooms during the early summer months. The plants are now in full growth and should be treated as already advised for the other *Sophrontitis* hybrids.

Arides, *Saccolabiums* and *Angraecums*.—Many of the early-flowering species will very soon have passed their growing season. Although this class of plants never seem to rest from making leaf growth, they require to be treated as resting plants, and only sufficient water must be given to prevent the leaves from shrivelling and turning yellow. All through the growing season the moss on the surface has been kept green and fresh, but now it must be allowed to dry up till it gets of a whitish-green colour before water is afforded. The strong-growing *Angraecum eburneum* is now showing its flower-spikes, and must be kept moist at the root until the spikes are cut.

A. sesquipedale is in full growth, and requires similar treatment; the flower-spikes will soon begin to develop from the axils of the leaves.

Brazilian Miltonias.—At this season there are few Orchids that are more beautiful or attractive than these. The following varieties are either in flower or fast pushing up their spikes:—*M. spectabilis*, *M. Moreliana*, *M. Bluntii*, *M. B. Lubbersiana*, *M. candida*, *M. Binotii*, *M. Clowesii*, *M. Crashleyana*, *M. Veitchii*, *M. Lamarekiana*, *M. Cogniauxiae*, &c. The pure white-lipped *M. cuneata* usually flowers in January or February. All of the varieties come into flower when there is a comparative absence of bloom in the houses, and they retain their colour and freshness for a considerable length of time. After the spikes are cut the plants will be at rest, and until growth recommences they should be kept just moist at the root. It is better to err rather on the dry side than on the wet. Keep them in the cooler and lighter part of the intermediate house during the winter.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

In all gardens where many fruit-trees are grown a piece of land should be set apart for raising stock, so as to obtain young, sturdy trees for planting in gaps as they occur. Cuttings of Gooseberry and Currant bushes should be put in during the present month. Let the cuttings be made 14 inches in length from mature wood, leaving a "heel" to each cutting. Take out a few of the lower buds from the cuttings, except in the case of Black Currants, and make the soil very firm about the cuttings, and if the base rests on a layer of sand so much the better. The beds for these should be prepared in an exposed situation. The lines should be made at 12 inches apart, allowing a space in the rows of 8 inches between each cutting. Young plants from cuttings inserted last autumn should be lifted and transplanted to afford them more room for growth. If they have plenty of roots, plant them 2 feet from each other each way, and at the end of next season these should become good bushes for planting-out.

Pruning Gooseberries.—Thin out the growths freely from large bushes crowded with wood, pruning back all side shoots to within a couple of eyes, and shortening the leaders a little if they are very long. Leave plenty of young wood in for bearing fruit, but do not overcrowd the bushes. In some gardens where birds are troublesome, the pruning of Gooseberry-bushes is left till late in spring; but I prefer to do the work early, and to protect the bushes afterwards with thread or netting, and by dusting the branches occasionally with soot and lime. When the work of thinning has been completed, gather up the prunings, and when all the leaves have fallen, clear away the surface soil beneath the bushes, dress the bushes with fresh soot and lime, and afford the roots a top-dressing if this is necessary. When making new plantations, keep all those varieties expressly for dessert purposes together. Cordon Gooseberries produce fine fruits, and when neatly kept, are ornamental. Gooseberries are sometimes cultivated against north walls, and generally produce excellent fruit; but in some seasons the fruits grown in such a position do not develop very high flavour.

Pears.—The gathering and storing of Pears should be drawing to a close; all the better varieties, such as Doyenné du Comice, Beurré Superfin, Marie Louise, unfortunately ripen about the same time. Good late varieties are not too plentiful. The best late variety here is Josephine de Malines; the fruits are not large, but have excellent flavour.

Apples.—Most of these have been gathered and stored. Owing to the roots being rather dry, the fruits have ripened quicker than they usually do, and many of the Apples here began to drop almost before they were sufficiently ripe to keep well. Those which were gathered first should be examined weekly, in order to remove any decayed fruits. Keep the atmosphere of the store-room cool, and open the ventilators in dry weather, but do not admit cold winds or fog.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	OCT. 13	Royal Horticultural Society's Committees Meet.
THURSDAY,	OCT. 20	Brighton Horticultural Society's Meeting.
FRIDAY,	OCT. 21	German Gardeners' Club Meeting.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
TUESDAY NEXT—
Important Sale of two Freehold Cottages and Meadow, modern Buildings, Arable Land, &c., on the Station Estate, Farnbridge-on-Crouch, by Protheroe & Morris, at 2.
TUESDAY, WEDNESDAY, and THURSDAY NEXT—
Sale of well-grown Nursery Stock, at the Nurseries, Ash Vale, Aldershot, by Protheroe & Morris, at 12 o'clock each day.
WEDNESDAY NEXT—
Palms, Plants, Azaleas, Bays, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.
FRIDAY NEXT—
Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—39°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 12 (6 P.M.): Max. 58°; Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 13 (10 A.M.): Bar., 30.0; Temp., 50°. Weather—Bright.

PROVINCES.—Wednesday, October 12 (6 P.M.): Max. 55°; South Coast of England: Min. 43°; North-East Coast of Scotland.

The Exhibition of the National Potato Society.

WHEN a new Society is called into being it has to justify its existence if it is to succeed. The National Potato Society, which owes its inception to the energy of Mr. WALTER WRIGHT, bids fair to do this. When the enormous economic importance of the Potato is considered, it is evident that a Society which should guide the growers in the way that they should go has its work cut out. We all want to know what are the best sorts to grow in particular localities and for particular purposes. We want some guide in assessing the merits of new varieties, each one more loudly vaunted than its predecessor, and frequently bought and sold at prices that are preposterous, and bear but little relation to the intrinsic value of the variety. We desire to know which, if any, varieties have a right to the title of "disease-resisting"; to know under what conditions and in what localities the immunity has been observed; whether the freedom from attack is noticeable every year, and so forth. Information of this exact character is best obtained from comparative trials in different counties under different conditions. The Society is undertaking such trials, and the results will be forthcoming later on.

An exhibition such as that at the Crystal Palace, except for purely commercial purposes, is a much less important matter. The amount of information it conveys is relatively small. From this point of view the memorable exhibition in the Aquarium in 1886 was singularly valuable and unusually interesting. The identification of varieties is in many cases impossible from an inspection of the tubers alone. We have to trust to the correctness of the labels. This might at first sight be thought to indicate that some so-called varieties are of the "too much alike" order, and should in consequence be eliminated. This may be so in some cases, but it must also be re-

membered that in many instances, although the tubers appear alike on the exhibition-table, there are differences in the haulm, the foliage, the flowers, and especially in the season at which the tubers can profitably be lifted. Those exhibitors therefore who were able to exhibit the haulm in growth rendered special services, and their efforts should receive recognition accordingly. Of course at this period of the year this cannot always be done, but it is evident that for purposes of instruction it should be carried out wherever possible.

With reference to the comparative immunity from disease, it must be admitted that mere outward inspection, or indeed microscopical examination, is not always adequate to afford an explanation of the results. In the case of Discovery—a fine plant of which some 5 feet in height and as much through was kindly sent us by Messrs. SUTTON for examination—it was evident that its very robust character, late growth, and hard, woody stems would give it a good chance against fungous attacks of any kind. We allude to this point because it has been proved by Prof. MARSHALL WARD and Mr. SALMON that in other plants besides the Potato, very great and important differences as to immunity from fungus attacks may and do exist without the slightest differences either in outward appearance or internal structure; the difference, whatever it is, exists in the protoplasm, and it is not discoverable by any means at present in our possession. This fact therefore justifies the continued production of new varieties, some of which may be less susceptible to disease than others; and it points to the necessity of comparative trials under the auspices of a central Society.

As to the details of the show we must refer to another column. It was principally a comparative exhibit between leading trade-growers; and, without wishing to make invidious comparisons, we think the winning of the Llewelyn Cup by Messrs. SUTTON is a just recognition of the value of their labours in this field; and no one will question the appropriateness of the award of a Gold Medal to Messrs. DOBBIE & Co., of Rothesay, for their well-selected exhibit.

It was pleasant to meet so many enthusiasts in Potato-culture, and specially satisfactory to find that the weight of eighty-eight years did not prevent ROBERT FENN from journeying from beyond Reading to take part in labours in which he had won fame when many of his present colleagues were boys, or even not then existent!

At the luncheon, which was very numerously attended, Mr. HALL, of Rothamsted, presided, and in his speech alluded to the large acreage under Potato culture, and to the value of the crop, which he estimated at ten millions of pounds per annum, without taking into account the crops grown by cottagers and allotment holders, records of which do not find their way into the official statistics. Where an average farmer expects to get about £12 an acre from his crops, the Potato grower looks for £35 to £40 per acre; and as to forestry, Mr. HALL pointed out, that while the Potato gives a quick return, it would be thirty or more years before a satisfactory balance-sheet could be shown in the case of woods, but he did not point out that the land that would grow trees would not always grow any other crop.

Mr. HALL called attention to the objects of the Society, which he said deserved the support and co-operation of all Potato-growers, and concluded by proposing prosperity to the Society, associating therewith the names of Mr. ARTHUR SUTTON, as representing England; Mr. FINDLAY, in whom Scotland finds a most worthy exemplar; and of Mr. WILLIAMSON, who spoke for Ireland, a country pre-eminently devoted to the cult of the Potato. Of course thanks to the exhibitors and to the organisers of the show were as cordially rendered as they were thoroughly deserved, and those who made the journey to the Crystal Palace in the midst of a typical London fog will feel that their enterprise was amply rewarded. A note upon the proceedings at the afternoon Conference will be found on another page.

ELÆOCARPUS CYANEUS [see Supplementary Illustration].—This is a tree or shrub not often seen in our gardens, though it was introduced from Australia as long ago as 1803, and was figured in the *Botanical Magazine*, t. 1737. The foliage is shining dark-green, the elegantly-fringed flowers are white, and the berries of a purplish-blue colour. The specimen from which our illustration was taken was obligingly forwarded by Mr. BEDFORD from the gardens, Straffan House, co. Kildare, Ireland.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held in the Royal Horticultural Hall on Tuesday October 18, when a lecture, illustrated by lantern slides, will be given by the Rev. Prof. GEORGE HENSLOW, V.M.H., on "Geographical Botany as a Result of the Adaptability of Plants."

—At a meeting of the Council held on October 4, on the question of the terms to be allowed to special horticultural societies, it was decided to grant all such societies, when holding a show in conjunction with one of the Royal Horticultural Society's fortnightly meetings, the following privileges:—

1. Four transferable admission tickets to each £1 Is. subscriber to the special society. Two transferable admission tickets to each 10s. 6d. subscriber. One transferable admission ticket to each 5s. subscriber.
2. Ten pounds in money towards the prizes.
3. The Royal Horticultural Society will make no award to any exhibit which follows closely on any class under the Special Society's schedule. Such exhibits must be entered with the Special Society.
4. The Royal Horticultural Society will provide and fix all staging, bottles, plates, &c.
5. The arrangement of the exhibits must be left entirely to the Royal Horticultural Society.

W. WILKS, Secretary.

FRUIT SHOW IN IRELAND.—The following is a programme of the proceedings at the conference to be held in the Royal Dublin Society's premises, Ballsbridge, Dublin, on Thursday, October 20, 1904:—

- I. Inspection of fruit and fruit packages in the Main Hall at 10 A.M.
- II. Address by the Right Hon. Sir HORACE PLUNKETT, K.C.V.O., Vice-President of the Department, at 11 A.M., in the Council Room.
- III. Discussion on the following subjects:—
 - (1) The possibility of fruit-growing on a commercial scale in Ireland, and how best the Department can encourage this industry.
 - (2) Merits and demerits of the packages suggested by the Department for general adoption. Desirability of a uniform standard of package for fruit.
 - (3) The markets for Irish fruit. The requirements of special markets. Defects in the present system of marketing.

NARCISSUS BULBOCODIUM has been found abundantly in one locality near Nantes, but under circumstances which lead M. GADECEAU to the conclusion that it is, like *N. Telamonius plenus*, not truly native, but the descendant from introductions many years ago from Bayonne or its neighbourhood.

BOTANICAL LECTURES AT CHELSEA.—A course of four lectures on "Modern Botany and its Problems" is to be given, under the auspices of the University of London, at the Chelsea Physic Garden, S.W., by Sir WILLIAM THISELTON-DYER, K.C.M.G., C.I.E., LL.D., F.R.S. (Director of the Royal Botanic Gardens, Kew), on the following dates:—October 12, 26, and November 2, 1904, at 4 P.M. The lectures are addressed to advanced students of the University, and others interested in botany. There is no fee for the course; cards of admission may be obtained on application to Mr. P. J. HARTOO, Academic Registrar. The first lecture was delivered on Wednesday last, Oct. 12, before an audience of ninety-six persons, including the Principal of the University, Sir ARTHUR RÜCKER, Professors BOWER (from Glasgow), FARMER, OLIVER, DARWIN, Dr. SCOTT, J. G. BAKER, &c. Sir ARTHUR RÜCKER in introducing the lecturer made reference to the objects and great value of the series of lectures now being given, and briefly referred to the course events had taken during the past two years in the advancement of science, and of the building up of a University for London worthy of its great name. He said, a few years ago it would not have been possible to get together such an array of specialists to deal with the particular subjects in the way that this series of lectures was being dealt with, each course being given by men who had distinguished themselves in a particular branch of botanical science. As head of the great botanical centre at Kew, he said, Sir WILLIAM THISELTON DYER was in a unique position to deal with the subject of the present course—"Modern Botany and its Problems."

SIR WILLIAM DYER, in his opening remarks, said he preferred to call the lecture "Notes" on various phenomena which had occurred to him in his experience as head of the Kew establishment. Appreciative reference was made to the early work of STEPHEN HALES, and his conception of vegetable phenomena, and as evidence that botanists in this country had always been to the front when dealing with plant physiology, SACHS' *History of Botany* was quoted. Speaking of carbon dioxide, it was incidentally pointed out that it was possible to have too much of this necessary element of plant-food in a given area; and as a practical illustration, a case was cited of a large ornamental glasshouse at Kew, which was built of stone and ironwork, and tightly glazed, forming an almost hermetically sealed box. The health of the plants in this house not being as robust as it should have been, it was decided to cut large holes in the stonework and put in ventilators, so as to be able to pass a current of fresh air into the house, the ventilators being so arranged that the fresh air as it entered the house was passed over the hot water-pipes and heated to nearly the same temperature as the air already inside the house. In a very short time it was found that a marked change for the better in the health of the plants had taken place. The research of BROWN with carbon dioxide was highly praised. Dealing with chlorophyll, the various changes were noted through which it passes to produce the shades of green in early spring and summer, and the colouration of the autumn, and reference was made to the excellent work done by the late lamented E. HAMILTON ACORN in enabling us to understand many of the chemical changes which takes place in the economy of the plant.

SCOTTISH HORTICULTURAL.—On the evening of October 4, Mr. T. A. Searlett, a gentleman who has made the Potato a speciality, read a paper to the members of the above association on that popular tuber. The subject was dealt with in an exhaustive manner, nothing in connection with Potato growing from the gardener's point of view being omitted. Mr. Searlett is one of the few who have had the opportunity of testing on a

large scale express methods of propagation, and his experiments have left him convinced that it is from beginning to end a delusion, and finally ruinous to the constitution of the Potato. A large audience was present to appreciate one of the best lectures that has been presented at any monthly meeting of the association, and a keen discussion followed its reading.

STOCK-TAKING: SEPTEMBER.—The Board of Trade Returns for the past month present a rather novel feature for observation—a heavy decrease in imports and a large increase in exports. As to the former there is no cause for excitement; there is a heavy shortage in the food supply, owing principally to crop failure in the United States; but as the Wheat-crop in Canada is a very heavy one, doubtless the shortage will soon be righted. The total imports for September are valued at £43,074,006, against £45,451,184 for the same period last year—a deficiency of £2,377,178. The falling off is nearly all in food stuffs. Under "fruit" the drop is heavy, which may be caused by the large crops at home—Apples and Plums for example. Cotton shows a great improvement—the value of the import being £1,373,000 greater. The following divisional summary will be of interest here:—

IMPORTS.	1903.	1904.	Difference.
	£	£	£
Articles of food and drink—duty free	10,331,032	9,016,281	—1,314,748
Articles of food & drink—dutiable	11,190,567	9,780,317	—1,410,250
All other Imports...	23,929,585	24,277,105	+347,520

It is stated that the American Wheat-crop will be sufficient only for home consumption. At the present day Manitoba Wheat is selling at 35s. a quarter, Russian and Kansas at 33s., whilst English reaches at present only 28s. to 29s. Why this is so, is now being asked by the British grower, and the *Journal of Agriculture* is endeavouring to answer the question, which is one needing a lot of answering; but the conditions affecting farming at home are utterly different from those outside, and the farmer will have to labour hard to put an additional crown on the market price of this cereal. As to flower imports, the value for the month was £557, against £741 for September, 1903—the loss being £184. Turning now to fruit we are able to give the following figures:—

IMPORTS.	1903.	1904.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw—			
Apples	482,148	228,971	—253,177
Apricots and Peaches	217	376	+159
Bananas—bunches ...	330,761	392,887	+62,126
Currants	45	81	+36
Grapes	144,529	194,129	+49,600
Lemons... ..	43,551	57,224	+13,673
Nuts—Almonds ...	16,919	17,930	+1,011
Others used as fruit	42,847	52,919	+10,072
Oranges... ..	10,917	25,828	+14,911
Pears	93,642	137,980	+44,338
Plums	337,042	44,290	—292,752
Unenumerated ...	127,389	106,787	—20,602
Vegetables, raw—			
Onions ... ..bush.	938,099	839,614	—98,485
Potatoes ... ..cwt.	356,599	286,254	—70,345
Tomatoes	100,700	88,575	—12,125
Unenumerated ..	16,554	13,770	—2,784

Doubtless, as noted above, the home crop has influenced the foreign supply, but the enhanced value of sugar has also much to do with it. The production of sugar in France has been reduced one-eighth—the price here has gone up a half-penny in the pound. The raising of the price of

sugar will lower the demand for all the luxuries into which its consumption largely enters, and this to the disappointment of youngsterhood. As to dried fruit, the imports were valued at some £204,029, against £221,346 for September in last year—a loss of £17,317. The imports for the nine months are valued at £398,364,875, against £394,237,561 for the same period in 1903—a difference of £4,127,314. Coming now to

EXPORTS.

the amount for last month is given at £25,928,659, against £23,315,751 for September, 1903—a gain of £2,612,908. A large portion of this increase is owing to shipments of cotton goods (£1,647,000) to the Far East, whence it is pleasant to learn there is so little chance of Indian famine. Woollen goods also show up, as do raw-stuffs and various other home manufactures. The value of the nine months' trade is placed at £221,188,788, compared with £217,378,805, or a gain of £3,809,983—a pleasant record.

"BOTANICAL MAGAZINE."—The October number contains coloured illustrations and descriptions of the following plants:—

Lonicera etrusca var. *superba*, t. 7977.—A Mediterranean species, hardy at Kew, but doing best under glass.

Mucuna sempervirens, Hemsley, t. 7978.—A native of China. It does well in the Temperate-house at Kew, and is remarkable for its dense racemes of large, purplish, Pea-shaped flowers. See Raffles in *Gardeners' Chronicle*, 1904, i., p. 282.

Loropetalum chinense, t. 7979.—A hardy Chinese shrub allied to *Hamelis*, but with linear white petals. It is useful for forcing purposes in early spring.

Zygocorax × *Veitchii*, Rolfe, t. 7980; and in *Gardeners' Chronicle*, 1887, i., p. 765.—The result of a cross between *Zygopetalum crinitum* and *Colax jugosus*.

SIR JOSEPH HOOKER.—The September number of the *Journal of Botany* contains an excellent likeness of the veteran botanist, of whose career we are all so proud. In the previous number the Editor reprinted Sir JOSEPH'S summary of the Flora of British India, a most lucid and valuable account, as might have been anticipated from his profound as well as extensive knowledge of the subject.

CAUTION TO GARDENERS.—We understand that the following circular letter has been sent to ninety gardeners who replied to an advertisement which appeared in our advertising columns on October 1. We can only repeat our warning to gardeners not to send money in any such cases, as it is impossible in all instances to guarantee the good faith of the advertiser:—

"RE ADVERTISEMENT (SKILL AND KNOWLEDGE).

Your application has been placed amongst those under consideration. I shall be in your locality in the course of ten days, and will arrange an interview.

Briefly, I may explain that the new garden is near to —, and the whole of the structural work has to be done. I have a Plan of the proposed work, and in the meantime you would do well to make yourself acquainted with it. I will forward you a lithograph copy on your enclosing Postal Order, 2s. 6d., which will be returned you at our interview, or keep the Order open, and then you will be able to cash it. Now I wish to mention that I have ten applicants down for interviews, all of whom I intend to see during this month. I want the best man obtainable; he will have a good situation, commencing wages 12s. weekly, and a house ready for occupation at the end of this month.

The garden includes fourteen acres, and after you have studied the Plan, and feel yourself competent, I will arrange interview; if otherwise, return the Plan, and your 2s. 6d. will be refunded.

On no account retain the Plan unless fully confident."

JOB'S TEARS would not seem suitable for supplying food. The hard seeds of this grass, often used for ornamental purposes as beads, when used for food have to be broken and then roughly ground. Analysis shows that the seeds are rich in proteids (18.8 per cent.) and fats (6.2 per cent.); starch about 58 per cent. *Agricultural News.*

NEPENTHES NORTHIANA VAR. PULCHRA.—M. JARRY DESLOGES, Château de Remilly et Aillicourt, Ardennes, France, writes that he has pollen of this fine variety, and also of several others, but for the moment he has no female flowers. M. JARRY DESLOGES would be pleased to send pollen to any hybridiser or grower of these plants, on condition that they send him a few seeds of the resulting cross.

ROSA GIGANTEA.—As some doubt has been expressed as to the flowering of this species in this country, Mr. F. CANT, of Colchester, tells us in a letter that it flowered with him once under glass. The suggestion that the flowers were produced from the stock is incorrect. Owing to the difficulty experienced in flowering this Rose, Mr. F. CANT considers it as worthless for his purpose and has therefore discontinued its growth, deeming it evidently unsuitable and unsaleable in England.

COLONIAL SHOWS.—We have often urged our colonial friends to refrain from copying European models, or at least to devote some of their energies towards the cultivation and improvement of their own native plants. These would be much more novel and interesting, and offer many more possibilities than the slavish repetition of exhibits suitable to European conditions, but less so to those obtaining at the Antipodes. It was therefore with no little pleasure that we read of the success of an exhibition of Cape Heaths, Everlastings, Proteas, Watsonias, and other South African plants at Johannesburg. The few names we mention are sufficient to indicate the interest and beauty of the exhibition. We trust it may become an annual fixture.

DUNSTABLE.—We have received a copy of a work dealing with the history and surroundings of the town from the pen of our valued colleague, Mr. WORTHINGTON SMITH. We shall take an early opportunity of noticing it at greater length. In the meantime we may say that those interested in archaeology and municipal history will find in the volume a mine of information.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At a meeting held on September 21 last, the Floral Committee awarded first-class Certificates to *Glaucium flavum tricolor*, as a new annual, from Messrs. V. SCHERTZER & SONS, of Haarlem, and to *Cypripedium insigne* "Johanna Smit," from Mr. C. J. KIKKERT, of Haarlem. Certificates of Merit were awarded to *Begonia metallica* Van Geerti, from Mr. M. ALDERDEN, of Aalsmeer, and to *Begonia Froebeli nana*, from Messrs. V. SCHERTZER & SON, of Haarlem. A Botanical Certificate was awarded to *Asparagus acutifolius*, from Mr. A. S. BERG, of Amsterdam (gardener, Mr. JAC. J. KRIEST). A Silver Medal was awarded for a collection of cut Roses, from Messrs. GRATAMA BROS., of Hoogeveen, and Bronze Medals for a collection of Cactus Dahlias from Mr. C. VAN BLANKENSTEYN, of Veemstede, and a collection of stove Ferns, from Mr. EDE LANGER, of Amsterdam (gardener, Mr. G. J. BOS).

A NEW FEATURE AT A CHRYSANTHEMUM SHOW.—In the schedule of prizes of the Gainsborough and District Chrysanthemum Society there appears a conundrum competition, as follows:—1. "Why is a Chrysanthemum like the British House of Commons?" 2. "What is the difference between a Show Chrysanthemum and a groom who catches a runaway horse after a

struggle?" 3. "Why is a gardener like a burglar (with apologies to the gardener)?" An entrance-fee of 1d. has to be paid by each competitor, and the two most correct series of answers will each be awarded a 1st prize of 5s. in cash and a 2nd prize of 3s. in goods. If no correct answers are received, the two best sets will be awarded the prizes. As the show lasts two days, the answers to the conundrums must be sent in by 7 P.M. on the second day, and the answers will be declared at 8 P.M.

MR. J. B. CARRUTHERS, Assistant Director of the Royal Botanical Gardens of Ceylon, has been appointed the first Director of Agriculture of the Federated Malay States, and leaves Ceylon to take charge of his newly-formed Department next month.

COLONIAL PUBLICATIONS RECEIVED.—Report of the Fruit Growers' Association of Ontario for 1903.—*The Amateur Gardener*, a monthly journal published in Sydney, price 3d.—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, from October, 1903, until March, 1904.

KEW NOTES.

ORCHIDS IN FLOWER.—The following is a list of species and varieties in flower on October 8:—*Laelia pumila*, and var. *praestans*, L. × *Enterpe*, *Laelio-Cattleya callistoglossa*, L. - C. *massiliensis*, L. - C. *Amelia*, L. - C. *Schilleriana*, *Epidendrum Wallisii*, E. *variegatum*, E. *elongatum*, E. × *Obrienianum*, E. *roseum*, E. *inversum*, E. *fragrans*, E. *purum*, E. *vitellinum*, *Oncidium Kramerianum*, O. *Geertianum*, O. *Forbesi*, O. *crispum*, O. *iridifolium*, O. *varicosum*, O. *excavatum*, O. *obryzatum*, O. *ornithorhynchum*, *Cattleya Harrisoniana*, C. *labiata*, C. *Dormaniana*, *Miltonia Clowesii*, M. *Cogniauxiae* var. *bicolor*, M. *castanea*, M. *candida*, M. *spectabilis* var. *Moreliana*, M. *Binotii* var. *superba*, *Maxillaria grandiflora*, M. *rufescens*, M. *variabilis* var. *media*, M. *erocaea*, M. *nigrescens*, *Rodriguezia venusta*, *Coeogyne fuliginosa*, *Sobralia × dellensis*, S. *Veitchii*, *Habenaria carnea*, *Spathoglottis × kewensis*, S. *plicata* var. *Micholitzii*, S. *Hardingiana*, *Catasetum Christyanum*, C. *splendens*, C. *quadridentis*, C. *macrocarpum*, *Trizeuxia falcata*, *Eulophia maculata*, *Liparis elata*, *Cirrhopetalum Roxburghii*, *Bulbophyllum calabaricum*, B. *capituliflorum*, B. *seychellarum*, B. *Peechei*, *Calanthe madagascariensis*, C. *Warpuri*, *Dendrobium trinervium*, D. *Phalenopsis*, D. *formosum*, D. *MacCarthiae*, D. *bigibbum*, *Polystachya Adansoniae*, P. *laxiflora*, P. *luteola*, P. *Buehanani*, P. *leonensis*, P. *rhodoptera*, P. *odorata*, *Mormodes pardina* var. *unicolor*, *Platyclinis Cobhiana*, Eria *stricta*, E. *aeridostachya*, *Peristeria elata*, *Pleurothallis pulchella* Warmingii, P. *pachyglossa*, P. *cardiocrepsis*, P. *pieta*, P. *astrophora*, *Cynorchis purpurascens*, *Odontoglossum Aspidorhinum*, O. *grande*, O. *oderatum*, O. *Lindleyanum*, O. *mirandum*, O. *constrictum*, O. *Uro-Skinneri*, *Phalenopsis Esmeralda*, *Platylepis anstralis*, *Scaphosepalum ochthodes*, *Cochlidoda vulcanica* var. *grandiflora*, *Masdevallia macrura*, M. *Veitchiana* var. *grandiflora*, M. *floribunda*, M. *peristeria*, *Restrepia antennifera*, *Sarcanthus arietinus*, S. *pallidus*, *Saccolabium penangianum*, *Megacalinium triste*, *Anthogonium gracile*, *Listrostachys Monteiroi*, L. *Chailluana*, L. *pertusa*, *Vanda caerulea*, V. *Kimballiana*, *Cleisostoma latifolium*, *Acampe papillosa*, *Cymbidium longifolium*, C. *Dayanum*, *Lanum Berkeleyi*, *Zygopetalum Mackaii*, *Stenoglottis fimbriata*, S. *longifolia*, S. l. var. *alba*, *Oberonia ensiformis*, *Lycaste Skinneri*, L. *xytriophora*, *Cypripedium insigne*, C. × *Sallieri*, C. *Charlesworthii*, C. × *cardinale*, C. × *calurum*, C. × *Dominianum*, C. × *Sedeni*, C. *Schlimii*, C. *longifolium*, C. *caricinum*, C. *Haynaldianum*, C. × *Maynardii*, C. × *Crossianum*, C. *Spicerianum*, *Vanilla Pompona* is also in fruit in the Victoria-house. W. H.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

TREE-PLANTING AND THE UNEMPLOYED.—With the serious question of the unemployed and severe agricultural depression through which this country is at present passing, is it not time that the State took up the matter of afforesting some of the vast tracks of waste and mountain lands that are to be found in various parts of the country. When on the one hand we consider that about £19,000,000 is annually paid to foreign countries for timber, and on the other that at home we have fully 15,000,000 acres of heath and mountain lands that are peculiarly suited for the production of high-class timber, the do-nothing attitude of those whom this question should most concern is not readily understood. For the past five-and-twenty years I have not failed to urge this matter, not only on the State, but on private owners of suitable land, and about a year ago, when giving evidence before the Select Committee on Forestry, and in a paper contributed by special request to the Board of Agriculture, I went fully into the question of afforesting, and pointed out what a saving to the nation and boon to the unemployed would be brought about by a well-organised scheme of tree-planting. The question is much too long to go fully into here, but after careful computation I might say that in so far as the labour question is concerned, for each one planted the services of an able-bodied man would be required for about fifteen days. A. D. Webster, Regent's Park, October 5.

CYTISUS × ADAMI.—I was much interested reading the article on "Graft Hybrids" in your issue of September 24, p. 217. There was a good specimen of *Cytisus Adami* on the lawn at Frensham Place, Farnham, Surrey. I should think the tree is quite 20 feet in height, but it had not such a spread of branches as the specimen shown in your illustration on p. 218. There was another specimen in the shrubbery near the house, but it was much overgrown by two Oak-trees. It seemed to me the *Laburnum* was much the stronger grower, and was gradually outgrowing the *Cytisus purpureus*; for when I took charge of the gardens in 1894, the flowering was about equal between *Laburnum* and *Cytisus purpureus* and intermediate flowers, but in 1903 the *Laburnums* were much more numerous. I should be glad to know if this has been the experience of others. I believe the gardens were laid out by Mr. Wm. Goldring for J. T. Weedroffe, Esq., about twenty five years ago, and the specimens named must have been planted at that time. W. J. P.

DEEPPENE GARDENS.—At these beautiful gardens there are at the present time thousands of *Souvenir de la Malmaison* and winter-flowering Carnations, all in robust health, and absolutely free from "rust." A very large batch of the favourite variety *Princess of Wales* in 3-inch pots is ready for removing into 6-inch pots. Well-grown Orchids from tiny seedlings to large specimens occupy several houses. *Vanda teres* and *Calanthes* are grown in large quantities. Splendid examples of good culture are to be seen in house after house of stove, greenhouse plants, and Palms. Specially good are *Cyclamen*, *Begonia Gloire de Lorraine*, *Bouvardias*, *Celosias*, *Euphorbia jacquiniiflora*, *Roses* in pots, and *Chrysanthemums*. A large number of *Violets*—"Marie Louise" and "La France" have recently been put into frames, the latter rightly considered the best of all single-flowering varieties. Both varieties are beginning to throw up their flowers, and they give great promise. I regret that time did not permit my going further over the grounds, but I was impressed with the general neatness of the place under the charge of Mr. Chamberlain, the head gardener, who has been some years at Deepdene. W. E.

FUCHSIA MADAME CORNELLISEN.—In reference to "R. D.'s" interesting note on *Fuchsias* with white corollas (p. 221), I may say that my acquaintance with the *Fuchsia* *Mme. Cornellisen* dates back to the early sixties. The plant was of straggling growth and shy-blooming habit. All the same, plants in every stage of growth, from plants growing in 48 and 32-size pots up to

specimens growing in 12-inch ones, were very effective, the white corolla and red tube and sepals of the flowers contrasting most effectively with the very dark, shiny, acute-lanceolate foliage—foliage which, with the exception of that of Marie Cornellisen, was quite distinct from that of any other Fuchsia within my recollection. "Marie Cornellisen" was only different from "Madame Cornellisen" in that the flower was a very fine double white with well-reflexed sepals. In the same collection of Fuchsias were included the now old-world varieties Venus de Medici, Guiding Star, Princess Alice, Banks' Glory, Minnie Banks, and Rose of Castile—all classed as light-flowered varieties at the time. The corollas in most cases ranged between pink and purple in colour. The "darks" included Tristram Shandy (light red with well-expanded corolla), Sir Colin Campbell (a fine double with purple corolla), and Old Carolina. H. W. W.

THE GARDENERS' ORPHAN FUND.—A case has recently come under my notice in which the discretionary power with which the committee of the above excellent fund is invested has enabled it to perform a valuable service where aid was greatly needed. I am convinced that gardeners do not generally know that beyond the allowance of 5s. per week for orphans elected upon the Fund until they reach the age of fourteen years, the committee is able "by means of special grants to assist in the purchase of clothing or tools, or in providing apprenticeship fees." The affording of such aid at a critical period is a substantial completion of the good work already performed. Another point that is not by any means understood, is the power the committee has to afford relief prior to the day of election, in cases where the orphans have been duly nominated and the case is proved to be an urgent one. Even in the event of failure at the first election, it is in the power of the committee to continue temporary assistance within certain limits. This is an admirable example of the real good which the Gardeners' Orphan Fund can do, both to the children and to the widows who have been left to fight a hard battle. Obviously the extent to which such aid can be afforded must depend upon the financial support which the Fund receives. There are hundreds of gardeners who would never miss the small subscription of five shillings per annum, and they would assist in rendering help where aid is most needed; for who can have greater claims upon our sympathy than the widows and their children? *An Old Gardener.*

"MELTON CONSTABLE" GRAPE.—At the Fruit Show last week I was impressed with the attractive appearance of three bunches of this Grape, weighing 15 lb.; and, anxious to know something more about the variety, I tasted the fruit. There was a complete absence of toughness of the skin so characteristic of Gros Colmar, the seeds are small, and the pulp did not require that degree of mastication that Gros Colmar does. It is very refreshing, and reminded me of the Hamburg flavour. I believe when its good points become known the variety will be largely planted, and I think it would prove to be an ideal Grape for marketing. W. H. Clarke, *Aston Rowant Gardens, Oron.*

THE CEDAR OF GOA.—I think it was Sir Joseph Hooker who considered that Cupressus lusitanica might be derived from C. sempervirens. I notice in the "General View of the Genus Cupressus," Dr. M. T. Masters remarks on the difficulty of assigning an origin to the Cupressus lusitanica of Portugal. I think, therefore, that your readers will be interested in hearing that further observations tend more fully to confirm the view, which, I think, I expressed some time back, that C. lusitanica is but the cultivated European form of C. torulosa, which the Portuguese derived, no doubt, from their settlements either in India or China, probably the latter. [C. torulosa is not known in China or near Goa. Ed.] Under cultivation here at the Cape, C. lusitanica and the allied forms, C. sinensis and C. pendula glauca, become so like C. torulosa that it is scarcely possible to separate them. The cones cannot be distinguished. Samples of cones from different trees of C. toru-

losa differ as much as cones from C. lusitanica, C. sinensis, or C. glauca. The only difference that I can detect between C. torulosa and C. lusitanica is that C. torulosa less frequently takes the white, glaucous form, and its foliage is generally somewhat sparser. That is to say, that C. torulosa looks something like C. lusitanica stretched out. Sometimes these stretched-out stems of C. torulosa give it, at a distance, the aspect of Cedrus Deodara. If I am not mistaken this similarity in appearance to Cedrus Deodara has been observed in the Himalayas. I am just back from an interesting tour in the Transvaal and Orange Colony. This is the country for Cypress and Deodar. Conifers there seem to take the place, as forest trees, of the Eucalypts near the coast. Many Eucalypts grow well in the Transvaal, but I am inclined to think that as hardy trees the main timber production will fall on Conifers, and preferably the Conifers of Mexico, China, and the drier Western Himalayas. E. Hutchins, *Conservator of Forests, Cape Town.*

DO SOME PLANTS PREFER DARKNESS TO LIGHT?—Experience compels me to answer the above in the affirmative. My attention was drawn to this somewhat conclusively by two plants of Aspidistra. Formerly the two were one plant, and when divided some years ago were re-potted in the same compost. The better plant was placed indoors, to stand in the corner of a sitting-room; the other was removed to the greenhouse. But after three years the plant that remained in the greenhouse was poor in colour when compared with that which has been grown in the sitting-room all the time. Nearly three months since that grown in the greenhouse was removed to the sitting-room also, and in spite of the poor light that reaches the plant, and the fact that it is in a shady corner nearly a dozen feet from the window, a great improvement is noticeable, though it still lacks the intense dark glossy green of the plant that for years has done duty in the same room. Precisely the same remark applies to a pair of Kentias, that in the greenhouse, though good in colour and healthy, will not at all bear comparison with one that for upwards of four and a half years has remained in the sitting-room. In both instances the finest health is seen in the room-grown plants. Ficus elastica and Dracena congesta are other similar plants, but the latter becomes drawn in course of time. All the Ferns I have tried in the same compartment disapprove of the treatment. E. H. Jenkins.

A WARNING TO GARDENERS.—I should like to warn gardeners against a certain class of travellers or packmen who are busy swindling just now. One of these men called here and showed samples of goods at absurdly low prices. If the goods are ordered by the unsuspecting, the packman promises delivery in ten days; but they never come. Before leaving these swindlers manage to sell for cash an inferior piece of cloth at an exorbitant price. There has appeared in the *Daily Mail* a paragraph describing this kind of fraud, but it was unfortunately too late to save many domestics in this neighbourhood from being victimised. The man who came here said he was authorised to do so by the G.N. Railway Co., which needless to say was incorrect. *A Reader.*

FRUIT - GROWING.—Experience teaches one how futile it is to attempt to convince Mr. Miller (p. 259) "against his will," even when backed up by the sworn evidence of clear and well-defined but stubborn facts, which I have repeatedly pointed out (see p. 226), but which said facts Mr. Miller just as persistently ignores. Doubtless many readers who are interested in the dispute in question will have read between the lines, and realised long since on which side the substance lay. Mr. Miller (p. 259) says: "An asset of capital in fruit-trees may be of some value to an estate," &c. Exactly so. This is climbing down with a vengeance. Why this is the very point—this accumulated capital in the fruit-trees in question—that I have all along been contending for. As a matter of fact, the veriest tyro in estate management or otherwise well knows that land that is well stocked with healthy productive fruit-trees at maturity has an accumulated

capital value in it, as well as an enhanced value per annum, thereby the interests of landlord and tenant are mutual. Moreover, I take it for granted that if Mr. Miller himself, who has hitherto so successfully planted fruit-trees on his own freehold, were to offer his estate for sale, he would take pretty good care that a similar valuation of these flourishing young fruit-trees should first be made, and this accumulated capital value would be added to the original freehold value and consequently be included in the total amount required from any prospective purchaser. There is no tenant speculation about this, but simply the natural and just sequence of business, the substance of which I venture to think Mr. Miller cannot contradict. W. Crump, *Madresfield Court.*

APPLE COLOUR.—There can be no doubt but that colour in Apples is a great marketable commodity. It is unfortunate perhaps, because the highest colour is rarely or never associated with high flavour. Our best flavoured dessert Apples, Cox's Orange Pippin, King of the Pippins, Jas. Grieve, Ribston Pippin, Cockle Pippin, Sturmer Pippin, Egremont Russet, Cornish Gilliflower, St. Edmund's Pippin, and Blenheim Pippin, rarely develop much colour, and it will even with these invariably be found that if high colour be in evidence flavour is less so. If we turn to the richest-coloured dessert Apples, Lady Sudeley, Duchess' Favourite, Worcester Pearmain, Bannan's Reinette, Crimson Queen, Col. Vaughan, Jolly Beggar, and others, these invariably show poor flavour, and but for their rich colour and consequent beauty, and hence market value, would hardly find a place in any garden. The same thing is seen in cooking Apples, the best of which invariably are those having green skins rather than those showing high colour. Mère de Ménage, Emperor Alexander, Peasgood's Non-such, Gascoyne's Scarlet, and even Bismarck, are, as a rule, soft and poor flavoured when highly coloured. To provide beauty or colour on the trees they are admirable, and some dessert Apples make beautiful lawn trees in the autumn; but if flavour has to be furnished, then they are worthless. It would be a matter of interest as well as of value could the excellence of flavour in dessert fruits be made more apparent at the Royal Horticultural Society's fruit shows. But when inferior varieties like Lady Sudeley get just as much recognition as does the superb Cox's Orange Pippin, or Pitmaston Duchess Pears as do Doyenné du Comice, there seems to be much needing amendment. Have classes for colour in Apples or Pears if desired, but by all means let flavour have its special classes also. *A. D.*

UNWISE SYSTEM OF MARKETING FRUITS.—A person in this neighbourhood had fifteen bushels of nice Apples, and was offered £2 2s. for the fifteen bushels, but would not accept it. Considering the abundant crop there is everywhere, the offer was a very fair one. But as the grower's father and mother and those before them had always sent their Apples to Covent Garden, to London they must go. The price made in London and returned, after deducting railway charges and commissions, was 7s. 6d., or sixpence per bushel. If the amount was not quite what she expected she had the satisfaction of knowing that she had followed the family custom of sending her small fruit-crop to London—so deep-rooted is custom. We have centralised our fruit market long enough. Let us decentralise it now and break down this ruinous system of sending so much of our fruit to Covent Garden. In every town large or small all over the United Kingdom we have our auction sales of cattle, property, furniture, and many other things too numerous to mention. Let us begin without delay and organise our fortnightly or monthly Fruit Sales, commencing with the Strawberry crop and continuing until the end of the following March. A place could be found under cover in every town to hold these sales of fruit by auction. The grower and consumer would be brought into closer touch with each other; the grower would also have the satisfaction of seeing his own produce sold. Railway charges, which amount to a considerable item, would be lessened. Let the growers grade their fruits properly into firsts and seconds, and in lots to suit every pocket, lots to be from

half a sieve to one bushel, no lot to exceed two bushels. The growers would then secure the "masses" for their customers. I feel sure this suggested finding of new markets for our fruit-growers would enable them to make 50 per cent. more profit than they have ever realised. W. F. Bowman, 25, Cambridge Street, Tunbridge Wells.

SOCIETIES.

NATIONAL POTATO.

OCTOBER 11, 12.—The first exhibition of the National Potato Society was held at the Crystal Palace on Tuesday and Wednesday last. On the opening day the weather was very dull, and a fog passed over London at about mid-day. From this or other causes the general public was scarcely represented at the show. The display of tubers from seedsmen and Potato cultivators was very extensive; but in the competitive classes there were fewer exhibits than were expected. This was particularly evident in the competitive classes open to trade growers. The highest prize offered at the exhibition was that of the "Llewelyn" Cup, and this was awarded to Messrs. SUTTON & SONS.

A Conference had been arranged to take place at 3.30, but owing to the proceedings at the luncheon lasting longer than was anticipated, the Conference was commenced rather later. At the outset of the proceedings Mr. Wright explained that owing to various circumstances Mr. Findlay was unable to deliver his promised lecture on "Selection"; therefore the only subject discussed was that of "Storage," which was introduced with a lecture by Mr. T. Redington. It had also been arranged that Mr. W. P. Wright (General Secretary) should open a discussion at 7.30 P.M. on "The Organisation of the National Potato Society."

Our illustrations on pp. 276 and 277 have been prepared from tubers exhibited by Messrs. Dobbie & Co.

CLASSES FOR TRADE GROWERS.

Twelve distinct varieties.—There were four exhibits in this class, and the best was adjudged to be one from Mr. WALTER NESS, King's Nettle, N.B. He had very highly coloured tubers of Purple Perfection as one of the "dishes," and these gained the 1st prize offered for the best coloured round variety. The other varieties were British Queen, White Beauty, King Edward VII., Evergood, Cramond Blossom, Standard, Conference, and Northern Star. The tubers generally were of full, rather large size, having clean and smooth skins, particularly those of "Evergood." The 2nd prize collection came from Mr. JAS. M. CHRISTIE, Scotshaig Mains, Tayport, N.B., and included a dish of tubers of "Blue Beauty," which gained 1st prize offered for the best coloured kidney. 3rd, Mr. H. Y. SCOTT, Boulham Road Nurseries, Warminster. There were no exhibits in the remaining four classes in this section.

AMATEURS.

Twelve varieties, distinct.—Of four exhibits in this class, the best collection came from Mr. B. ASHTON Lathom House Gardens, Ormskirk, and the tubers were among the best in the show, though slightly above the most useful size. The varieties were Webb's Empire, Northern Star, General Roberts, Guardian, Monarch, Satisfaction, Discovery, Surprise, Bountiful, Reading Russet (awarded 1st prize for the best coloured round), Abundance, and Snowball. 2nd, Mr. S. COLE, Althorp Park Gardens, Northampton. 3rd, Mr. E. S. WILES, The Rookery Gardens, Downe.

Eight varieties, distinct.—In this class the varieties were to include two varieties of each of the four sections—white, round, and kidney, and coloured round and kidney. Mr. E. S. WILES obtained 1st prize for the following varieties—round white, Pioneer and Royal Sovereign; round coloured, Purple Perfection and Lord Tennyson; white kidneys, King Victor and Satisfaction; coloured kidneys, Edgecote Purple and King Edward VII. 2nd, Mr. JOHN WEATHERS, Pyrmes Park, Edmondton.

In each of the following classes three dishes of distinct varieties were shown:—

White Round.—There were five collections of three dishes each of white round varieties, and the best came from Mr. F. G. CRAMPTON, Gate House, Sissinghurst, who had the varieties Up-to-Date, Snowball, and

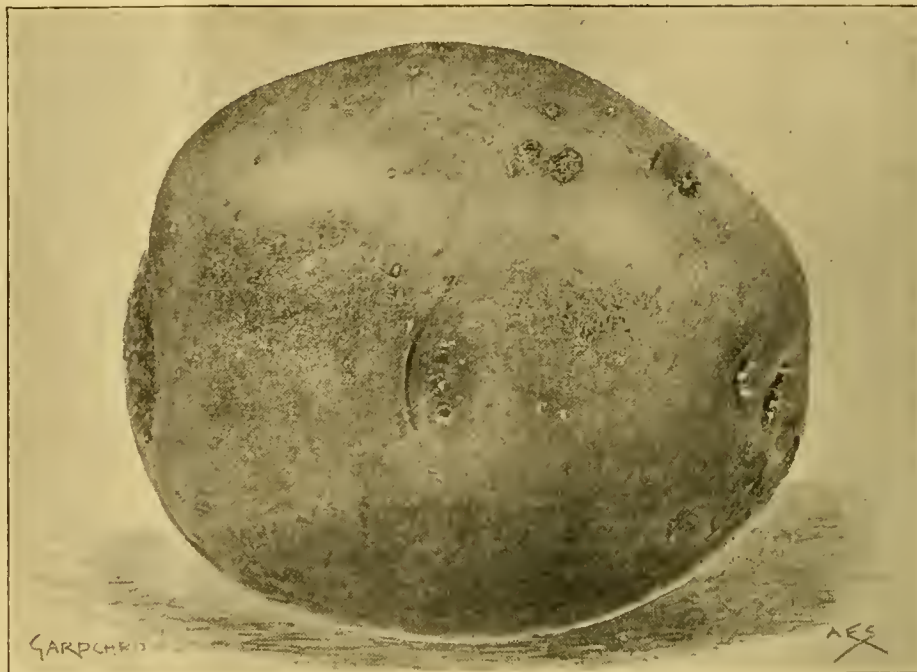


FIG. 122.—POTATO NORTHERN STAR.

Charles Fidler. 2nd, Mr. S. COLE; and 3rd, Mr. BEN ASHTON. In the 1st prize collection a dish of "Snowball" also obtained 1st prize for the best dish of round tubers shown by an amateur.

White Kidneys.—The varieties in the 1st prize exhibit, from Mr. E. D. PACKMAN, The Library, St. Mary Cray, were Factor, Improved Kidney, and Up-to-Date. 2nd, Mr. F. G. CRAMPTON, who had the varieties Daniel's Sensation Southern Star, and Brydon's Crampton, a white kidney variety. 3rd, Mr. BEN ASHTON. There were five exhibits.

Coloured Kidneys.—The only exhibit in this class was one from Mr. B. ASHTON, who showed Leda, King Edward VII., and Mr. Breese. The tubers of "Leda" were awarded the 1st prize offered for the best coloured kidney variety shown by an amateur.

CLASSES FOR COTTAGERS.

There were five classes for cottagers' produce, and in most of them some fine tubers were exhibited.

OPEN CLASSES.

Total Yield of any variety, from twelve consecutive [sic] roots, to be lifted under the supervision of the Committee, or of a Nominee of the Committee, and sealed.—The 1st prize was awarded to Mr. H. A. HOWES, Horn-castle, who showed produce weighing 76½ lb. from twelve roots of the variety Duchess of Cornwall. 2nd, Mr. H. Y. SCOTT, Boreham Road Nurseries, Warminster, who showed 67½ lb. from the same variety. The 1st prize included a Cup value 2 guineas, presented by the Crystal Palace Company.

Best Collection of Seedling Potatoes not in Commerce.—The 1st prize (a Silver Medal) was awarded to Mr. J. W. BOYCE, Welney, Wisbech, who showed a quantity of large tubers of the three new varieties following: Maxim (a kidney-shaped variety described as a "first early"), Peckover (very large, sometimes of kidney shape and at others round), and Goldfinder (a white round variety of very attractive appearance). The two former varieties will be distributed this season, but not



FIG. 123.—POTATO KING EDWARD VII.,
Showing the patches of pink colour observable in this variety.

"Goldfinder," the name of which will be changed, there being already a well-known variety bearing that name. There were several other exhibits of seedling varieties.

Classes 20 to 33 inclusive were for single "dishes" of the newer varieties, and in almost all the classes there were exhibits. Among the winners of 1st prizes were Messrs. CHARLES FIDLER, S. COLE, G. W. MILLER, Clarkson's Nurseries, Wisbech, B. ASHTON, T. STEWART, Annfield, King's Kettle, N.B., and D. NESS.

COOKED POTATOS.

Of four varieties shown in a class for the best single dish of cooked tubers, the variety "Factor," shown by Mr. E. D. PACKMAN, The Library, St. Mary Cray, was awarded the 1st prize. The other varieties shown were Snowdrop, Langworthy, and "Food of the Gods."

CLASS FOR SOCIETIES.

There were two classes arranged, one for societies not affiliated, and another for those in affiliation with the National Potato Society. There was no exhibit in the former class, but five in that for affiliated societies. The 1st prize was obtained by the Larkfield Gardening Society, per Mr. H. ROOTS, with the following varieties,

each root possessed on an average more than forty tubers, some of which as shown appeared to be nearly $\frac{1}{2}$ lb. in weight. This is very remarkable as being the produce of seed during the first year, and the results certainly give promise that most of the varieties will be found to have great productive capacities. Many of the seedlings were from crosses obtained from "Discovery," a new variety, of which good sample tubers were shown. The general collection of tubers from Reading included 150 varieties, and was very noteworthy.

NON-COMPETITIVE EXHIBITS.

Messrs. DOBBIE & Co., Rothesay, N.B., had an excellent display of tubers suitably arranged in baskets, which were disposed over a white ground, on which, between the baskets, were earthenware jars containing pieces of Potato haulm. On a semi-circular stage, with shelves in the centre of the exhibit draped with yellow, were shown tubers of several unnamed seedling white and coloured varieties, and a few of the newer named sorts. In a glass case also might be seen "seed berries" from "Great Central" and "The Factor" Potatoes, which had been cross-fertilised. We cannot particularise in this collection of 110 sorts, but it will

Mr. W. J. ATKINSON, Weston St. Mary, Spalding, presented a number of novelties, including several varieties not on the market. Sir John Llewelyn, Northern Star, Eldorado, Recorder, Evergood, and other varieties of recent introduction were noticed.

Mr. W. J. MALDEN, Manor Farm, Ham, showed most of the newer varieties, Northern Star, Discovery, Sir John Llewelyn, Eldorado, &c., including two quite new varieties, The Golden Wonder (a long dark-skinned kidney) and The Highlander (a very promising-looking tuber).

Messrs. E. W. KING & Co., Coggeshall, Essex, showed fifty-four varieties, including most of the new ones. The collective produce of one root of Northern Star, consisting of 155 small tubers, was interesting.

Mr. A. W. PEPPER, Bridge Farm, Downham, staged sixteen varieties—Dahmeny Early (a good-shaped early kidney), Empress Queen, Roy (a promising seedling), &c.

Messrs. MACKINDER & BENNETT, Spilsby, exhibited several of the newer kinds, including an excellent dish of the variety Sir John Franklin.

Mr. A. LIGHTON, JUN., Kirton, near Boston, Lincolnshire, set up a collection of tubers, displaying his



FIG. 124.—POTATO SIR JOHN LLEWELYN.

which it was necessary should represent two varieties in each of the four sections:—Snowball, Purple Perfection, American Rose, Peerless Rose, Up-to-date, Sir Walter Raleigh, The Factor, and Lord Tennyson. 2nd, the Valding Gardening Society, per Mr. E. H. WATERS; and 3rd, The Cranbrook Gardeners' Society, per Mr. A. BAKER.

"LLEWELYN" CUP.

A Cup value 10 guineas was offered by Sir John T. D. Llewelyn, Bart., for the best exhibit of Potatoes in the show, and this was awarded to Messrs. STURTON & SONS, Reading. This exhibit was at the foot of the gallery, below the great organ. Most of the tubers were arranged in baskets, placed on narrow tables having three shelves, but there were four mounds, 4 feet high or more, with tubers fixed on to the face of them, in the manner adopted at the Smithfield Cattle Shows to display the great roots of Swedes, Turnips, &c., shown there. Each of these mounds was surmounted with the Royal Arms. The varieties of Potatoes chosen for the faced mounds were well-known sorts, as Flourball, Windsor Castle, Satisfaction, and Abundance, varieties which were originally introduced by the Reading firm. A feature of this exhibit was a collection of nearly forty unnamed seedling Potatoes shown in punnets covered with velvet. In each punnet was shown the produce of a single seed sown in the spring of the present year from Potato berries obtained from crosses made in June and July, 1903; and in a large number of roots that were lifted it was found that

suffice to say that the tubers were throughout of the finest quality, and the exhibit was deservedly awarded a Large Gold Medal.

Messrs. BAKER, Codsall and Wolverhampton, exhibited a collection of tubers in round baskets, 100 varieties being represented. There were no unnamed seedling varieties, but all the recent novelties that are upon the market were included. So far as could be judged by this firm in a trial in which Sim Gray and Lym Gray were grown side by side, these varieties are synonymous. The tubers on the whole were first-rate exhibition specimens of not too large a size, but possessing clean, smooth skins, except in those varieties like Village Blacksmith, Purple Fortyfold, Ruby Queen, The Dean, and others that have characteristically rough skins. Pink-skinned varieties appeared peculiarly smooth and of bright appearance. Such were "Wonderful Red Kidney" and Reading Russett. An excellent sample of the white-skinned variety British Queen was shown, and Eldorado, Northern Star, Factor, King Edward VII., and Sir John Llewelyn were good. A Gold Medal was awarded to Messrs. BAKER for their exhibit.

Mr. O. W. D'ALCORN, Spalding, displayed a collection of tubers, including several novelties—Duchess of Cornwall (a white-fleshed kidney variety of large size), Dahmeny Red, Duke of York, Sir John Llewelyn, &c.

Mr. G. A. DENNE, 69, Queen's Road, Wimbledon, Surrey, exhibited several dishes of the variety Sir Richard Grenville, the product of two plants totalling 20 $\frac{1}{2}$ lb. in weight. It is a dark-skinned kidney variety,

produce to good advantage with the aid of a tastefully-draped groundwork of red. Here again one noticed good examples of most of the newer kinds, including excellent specimens of Eldorado with illustrations of its prolific cropping qualities.

Messrs. C. E. ANDERSON & SON, Ltd., Cupar Angus, Perthshire, N.B. The tubers were exceptionally clear-skinned and of commendable size and shape, a dish of Eldorado being especially noteworthy.

Messrs. BLAYDES & STEPHENSON, Low Risby, Appleby, Doncaster, showed baskets containing good examples of selected "seed" Potatoes of many desirable varieties.

Messrs. E. T. MARSH & Co., Ltd., 15, Borough High Street, London, displayed a similar collection to the last-named.

Mr. JAS. KERR, Dumfries, N.E., was awarded a Silver Medal for an excellent collection of tubers, including the variety Duchess of Cornwall, &c.

Messrs. BRADLEY BROS., Bardney, Lincolnshire, displayed numerous varieties, including several new unnamed seedlings. The Lindum (a large main-crop kidney), Yorkshire Glory (not on the market until 1905, claimed to be a prolific first early), and several hybrid seedlings of promise were noticed.

Mr. A. FINDLAY, Mairsland, Auchtermuchty, N.B., showed sixteen dishes of varieties of his own raising, including the well-known Eldorado, Northern Star, Colonist, Million Maker, Diamond Reef, Up-to-Date II., Gold Reef, &c. Several unnamed seedlings of great promise were also shown by Mr. FINDLAY.

Mr. JOSEPH BETTINSON, Outwell, Wisbech, brought, in addition to many of the newer English varieties, a number of American-raised seedlings, among which we noticed The Carman, a large kidney, claimed to be highly productive. A basket of the variety "Divide" impressed us with the shape and appearance of the tubers, being a remarkably handsome Potato.

Messrs. H. CANNELL & SONS, Swanley, had an extensive and representative collection of tubers, kidney, round, purple, &c. Gen. Roberts, Fylde Wonder, The Factor, Scotch Triumph, Challenge, King Edward VII., Edgecote Purple, Denton Seedling, Field Marshal, &c., were shown in good condition. We also noticed several unnamed seedlings (Silver Medal). Adjoining their Potatoes Messrs. CANNELL staged some excellent Onions—Ailsa Craig, Cranston's Excelsior, Selected Giant, &c.

Mr. F. M. BRADLEY, Peterborough, had a selection of well-grown tubers, making an especial feature of "The Recorder," an oval kidney-shaped variety of promising appearance.

Mr. W. COLEMAN, Swiss Farm, Tunbridge, showed samples of tubers and photographs illustrating the cropping capabilities of their variety Queen Alexandra.

Mr. FREDERICK G. CRAMPTON, Cranbrook, Kent, placed on the table an extensive group of a new variety, Southern Star, a good shaped Potato having the appearance of being a good market variety.

Messrs. CROSS & SON, Wisbech, exhibited several new varieties, also a root of the variety Northern Star, which demonstrated its cropping qualities. An interesting collection of cross-bred varieties in punnet baskets was also shown by this firm.

Mr. THOS. BENSON, Barnston Lane, near Birkenhead, presented the variety "Queen of the Earth," with comparative examples of other varieties grown in the same soil.

Mr. WM. DEAL, "Brooklands," Kelvedon, staged baskets of many varieties of proved merit, also of "The Nobleman" and of "The Highlander."

Mr. R. W. GREEN, Wisbech, staged twenty baskets of named varieties of the newer kinds, showing good examples of tubers (Silver Medal).

Messrs. HARRISON & SONS, Leicester, showed a collection of varieties, most of them in excellent condition "Prelude" (an oval kidney variety), British Queen, Sensation, Evergood, The Dean, Edward VII., &c.

Messrs. A. C. GILBERT & SON, Billingham, Lincoln, showed seventeen dishes of the newer sorts, including good tubers of "The Recorder," a first early kidney of good appearance. We also noticed Queen of the Field, an oval blue-coloured kidney.

Messrs. ISAAC POAD & SONS, York, staged a like number of baskets of tubers as the last-named. The variety Evergood was very fine. The Factor was also prominent, having excellent shape and desirable size. Recorder and Eldorado were included.

Mr. JAMES GARDINER, Perth, set up some of the newer varieties, "Sir John Llewelyn," "Recorder," "King Edward VII.," &c.

Messrs. WM. DAVIE & CO., Haddington, N.B., set up about eighty varieties—Davie's Caledonia, Northern Star, Scottish Triumph, Duchess of Buccleuch, General French, Snowflake, &c.

Messrs. W. P. LAIRD & SINCLAIR, Ltd., Dundee, showed excellent examples of Scotch-grown tubers—British Queen, Eldorado, Dalmeny Beauty, Rob Roy, Duchess of Cornwall, Sir John Llewelyn. The Macpherson, a new oblong kidney first early, rough-skinned variety, claimed to be an excellent cropper, was noticed.

Mr. J. W. CROSS, Wisbech, staged a number of tubers, among which The Recorder and King Victor were prominent.

Mr. HENRY SCOTT, Warminster, Wilts, staged many of the better varieties—Sim Gray, Eldorado, Duchess of Cornwall, and others.

Mr. J. F. WILLIAMSON, Mallow, Ireland, set up a nice stand of the variety Duchess of Cornwall. This exhibit was interesting as showing how one variety of Potato may be classified as round, oval, or kidney-shaped, &c., all types being shown in this collection (Silver Medal).

Messrs. W. W. JOHNSON & SON, Loston, Lincolnshire, staged a collection of about fifty varieties, including the newer sorts of proved merit. The Potatoes were of excellent appearance, shape, quality, &c. Several large illustrations of crops dug, &c., were displayed. Messrs. JOHNSON brought their new varieties, "The Pearl" and "The Diamond" (Silver Medal).

Messrs. S. G. RANDALL & SON, Skegness, Lincolnshire, in addition to a collection of tubers, displayed several growing plants of Eldorado.

Mr. F. PICKERING, Woodhall Spa, Lincolnshire, showed some splendidly grown tubers. "Recorder" was shown in perfection, good shaped, excellent sized tubers of good quality. Two sets of "Northern Star" lifted showed produce weighing 15 lb. and 20½ lb. respectively. From one tuber weighing 1½ oz. it was claimed that 4 cwt. 3 stone of produce was obtained.

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, staged a well-set-up exhibit in fancy baskets on a white table ground. The display consisted of ninety-five baskets containing eighty-five distinct varieties. Southern Cross is a new mid-season variety, a white-fleshed kidney of good promise; Warrior is a variety having oval rough-skinned tubers; Eldorado, Duchess of Cornwall, King Edward VII., Vicar of Laleham, &c. (Silver-gilt Medal).

Mr. THOS. A. SCARLET, Market Street, Edinburgh, showed unwashed tubers of about thirty varieties. A single root of Money Maker produced 120 Potatoes weighing 22 lb. net.

Mr. S. M. THOMSON, Warrander Park Crescent, Edinburgh, showed many varieties raised at Dalmeny, including Radium, Hero, Regent, Acme, Jewel, &c.



FIG. 125.—"LLEWELYN" CUP.
Awarded to Messrs. Sutton & Sons for their exhibit of Potatoes. (See p. 277).

HOBBIES Ltd., Dereham Nurseries, Norfolk, showed a collection, among which were arranged cut flowers. Potatoes "Duchess of Cornwall," "Cigarette," &c., were noticed, also their new variety "John Austin," of the Ashleaf class, an early Potato with surface eyes.

Messrs. W. DENNIS & SONS, Kirton, Lincolnshire, filled two long tables with varieties of Potatoes, in some cases exhibiting cooked examples with the tubers. Messrs. DENNIS made a feature of the variety "Cropper," a large prolific Potato. There were also Dalmeny Hero, King Edward VII., Evergood, Northern Star, Eldorado, &c. (Silver Medal).

Mr. ROBT. SYDENHAM, Birmingham, showed three varieties, "Discovery," "Vermont Gold Coin," and "Northern Star."

Messrs. J. T. WHITE & SONS, Spalding, exhibited a collection of many of the newer varieties, Eldorado, Sim Gray, The Diamond, Duchess of Cornwall, &c.

Messrs. WM. COLCHESTER & CO., Ipswich, exhibited a number of fertilisers and samples of Potatoes grown with the aid of these manures.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited an excellent collection of Apples and Pears.

Mr. DAVID RUSSELL, Essex Nurseries, Brentwood, put up a group of ornamental shrubs and Conifers.

Messrs. POWELL BROS. & WHITAKER, Wrexham, exhibited two of their Potato-digging machines.

Messrs. JOHN PEED & SON, West Norwood, London, put up a meritorious collection of Apples and Pears.

LECTURE ON "STORAGE."

Under the Chairmanship of the Committee's President, Mr. A. D. HALL, M.A., the proceedings at the Conference were opened shortly before 4 o'clock in the Garden Hall.

The Secretary, Mr. W. P. WRIGHT, having announced that Mr. Findlay was unable to deliver his promised lecture on "Selection," the PRESIDENT called upon Mr. T. REDINGTON to deliver a lecture on the subject of "Storage."

Mr. REDINGTON's remarks were directed to explaining a system which has been adopted in the case of experimental Potato cultivation in Yorkshire, under the auspices of the Yorkshire College. The lecturer having stated that the conditions it was desired to produce were such as would preserve the tubers from frost and from moisture, and render unnecessary the use of artificial heat of any kind, proceeded to describe a glass shed that had been built for storing the tubers. The one already built had glass over only one-half of the roof; but if the work had to be done again, the roof would be covered entirely with glass. By means of movable glass sashes at the side and on the roof, abundance of air was admitted whenever the atmospheric conditions out-of-doors were better than those in the shed. The "sets" were carefully sorted out at the time of lifting, and put into boxes made in such a manner that they could be placed one on another, and still permit of the air's circulating between each box. An effort was made to lift the tubers in fair weather and remove them to the shed in these boxes before the skin of the tubers could become damp from rain or dew. In the storeroom the boxes are piled one upon another in rows. Although the system had been in practice for many years, there had not been occasion to employ any sort of artificial heat to exclude frost. If the air outside became very cold, the ventilators were closed, and during severe frost canvas sheets were put over the boxes containing the tubers. In this way the natural warmth of the tubers was conserved, and consequently frost could not enter them. These means had been found to be more than sufficient to exclude 20° of frost.

Mr. REDINGTON then proceeded to describe the evils resulting from the common practice of "putting" the tubers in a "pie" or "clump," where they became wet and sprouted prematurely. Often these sprouts had to be rubbed off, and the tubers were not only weakened proportionately, but the primary and strongest sprouts were sacrificed. Attempts to induce such tubers to sprout again sufficiently early for first crops, by putting the "sets" in green-houses, vineries, cow-houses, or, in the case of cottages, in cupboards by the fire-side, were described and denounced.

The lecturer said that such tubers were removed from a temperature of about 55° and put into the soil having a temperature about 20° lower, thus causing them a very great check at a vital period in the life of the plants. Under the system the lecturer has practised in Yorkshire the tubers produce short green sprouts that are in every way suitable for making growth immediately upon being placed in the soil.

In regard to the question, "Would it pay?" Mr. REDINGTON said that it would do so. It had been proved that tubers stored as he had recommended would yield a crop amounting to two tons per acre more than is obtained from tubers stored in the common manner, and a store that would hold 8 or 10 tons of sets could be built for £60 or £80.

In reply to questions, Mr. REDINGTON said that he would prefer a solid wood floor for such a store, but not one made of boards. That in Yorkshire was of earth; each box was capable of holding about two stones of sets, and they were made in Leeds at a cost of 4½d. each. A gentleman present having raised the question of the greater value of immature sets, the Chairman said the meeting had better keep to the question of storing. If they discussed the question of immature sets they would not be able to get away that afternoon.

Mr. WALTER BLAKET, of Fulford, Yorkshire, then made some remarks upon the subject from the farmer's point of view, or that of the cultivator of such areas as 200 acres of Potatoes, maintaining that the recommendations of the lecturer were quite impracticable in such cases, though they might be of use to the smaller grower, or in the case of new and expensive varieties. He believed that his "Up-to-Date" had yielded as good crops generally as were obtained from tubers treated as advised by the lecturer.

Mr. GEO. GORDON described the methods he had practised many years ago to keep the tubers under

better conditions than those obtaining generally, and said that the results more than repaid him for the work. He believed that methods that would pay when practised for small quantities would pay proportionately well if applied to larger numbers.

Mr. ALEX. DEAN said it was an advantage to have the tubers make sprouts before planting, because if any of the tubers had become mixed they could generally be identified more easily by the sprouts, and these, together with "blind" tubers, of which there were generally some, could be removed before planting was done, thus preventing gaps that would occur otherwise. He strongly supported the lecturer's recommendations, and declared that such means of storage would be remunerative in all cases.

ROYAL BOTANIC.

OCTOBER 12.—The autumn show of the Society was held in Regent's Park on the above date, the weather being all that could be desired. The number of entries was small, but a splendid collection of vegetables, staged by Lord Aldenham's gardener, Mr. Beckett, was in itself an excellent feature, and an object-lesson in the culture of good vegetables. Several collections of hardy flowers, well-grown stove and greenhouse plants, dishes of hardy fruits, bunches of Grapes, &c., were the principal features. Several miscellaneous sundries, such as stakes, ladders, tubs for plants, &c., were also prominent.

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. Beckett), set up a collection of vegetables in his usual superb style. All the varieties were shown in perfect condition, and occupied about 50 feet run of tabling. Cauliflowers were excellent, Early Emperor, Dwarf Mammoth, Early Autumn Giant, Walcheren, &c. Celery was of large size and of excellent quality. Onions were also strikingly displayed, large well-shaped bulbs of Ailsa Craig, Record, Excelsior, &c., being noticed. Excellent pods of The Gladstone and Autoerast Peas were included. Carrots and Parsnips were also noteworthy, indeed the whole display, including Tomatoes, Potatoes, Turnips, Beans, Endive, Lettuce, Spinach, Brussels-Sprouts, Cucumbers, Leeks, Kale, &c., was presented in the first-class style for which this grower is famous (Large Gold Medal).

Messrs. JOHN LAING & SONS, The Nurseries, Forest Hill, London, staged an extensive group of ornamental shrubs and Conifers, also a batch of Clematis in flower (Large Silver Medal).

Mr. ERIC F. SUCH, Maidenhead, staged vases of Chrysanthemums, perennial Asters, Solidago, &c., working in the group *Glycerium argenteum*, and coloured Oak-foliage, &c. The Chrysanthemums were of such varieties as are used for cut flowers and market purposes.

Miss ADAMSON, South Villa, Regent's Park, staged a collection of stove and greenhouse plants, Begonias, Codaeums, Dracaenas, Caladiums, Celosias, &c., very tastefully arranged. A number of well-flowered plants of *Cattleya labiata* occupied the centre of this group. Adjoining were examples of several varieties of Grapes from the same gardens, Black Hamburgh, Muscat of Alexandria, Black Alicante, Buckland Sweetwater, &c. Bunches of Tomatoes and sprays of *Ficus radicans* were arranged round the Grape-stands with good effect. (Large Silver Medal).

Messrs. T. S. WARE, Ltd., Feltham, Middlesex, set up an attractive group of hardy flowers, Asters, Chrysanthemums, Gladioli, Lilies, Phlox, Pyrethrums, &c. *Senecio pulcher* was very pleasing with its bright rosy-purple petals. *Anemone japonica* Queen Charlotte was also noticeable (Large Silver-gilt Medal).

Messrs. WM. CUTBUSH & SON, Highgate, N., arranged an extensive group of hardy plants in first-class style. Perennial Asters were conspicuous in many desirable varieties; also smaller-flowering Chrysanthemums from the open. Several pans of *Colchicums*, *C. autumnale* album, *C. a. flore-pleno*, &c., also *Crocus zonatus*, were well flowered. Among the Asters was a dwarf variety, for which the Society gave a Certificate of Merit. The colour is white, similar to *A. candida*, but the growth only reaches a height of about 12 inches (Silver-gilt Medal).

Messrs. S. SPOONER & SONS, Hounslow Nurseries, Middlesex, staged a meritorious collection of Apples and Pears. An excellent dish of Cox's Orange Pippin was noticed, also one of Lord Derby. Emperor Alexander, Bismarck, Striped Beaufin, Wealthy, Lane's Prince Albert, &c. Some good examples of Bourne Diel Pear were seen (Silver Medal).

HOBBIES, Ltd., Norfolk Nurseries, Dereham, set up several vases of Cactus Dahlia blooms. Some of the flowers gave evidence of the lateness of the season for these flowers.

THE FOUR OAKS SUNDRIES Co., Sutton Coldfield, Birmingham, sent several of their appliances, including a pocket secateur which should prove useful to Rose-growers and others.

Messrs. AMBROSE & Co., The Nurseries, Chesham, brought a bunch of their new Grape Melton Constable, with foliage, which was brilliantly coloured.

GARDENERS' DEBATING SOCIETIES.

REDHILL, REIGATE, AND DISTRICT GARDENERS'.—The fortnightly meeting was held in St. Matthew's Schoolroom on Tuesday, September 27, the lecturer being Mr. A. Trowers, whose subject was "Spring Gardening." Over 100 members were present. Mr. Trowers clearly showed that a very great amount of pleasure may be obtained by naturalising bulbs in grass. The most satisfactory soil for this purpose was stated to be good medium loam. Mr. Trowers strongly advised growers to plant strong, sound bulbs.

LOUGHBOROUGH AND DISTRICT GARDENERS'.—The Annual Meeting of the members of this Association was held in the Town Hall on Tuesday, September 27. In the unavoidable absence of the President, W. C. Burder, Esq., Mr. J. T. Smith, Chairman of Committee, presided. The funds show a balance in favour of the Society. The report and balance-sheet, read by the Hon. Sec., Mr. D. Roberts, were adopted. The President was thanked for his services and unanimously re-elected. The Committee were elected, Mr. W. H. Cooke, gardener Kingston Hall, and Mr. H. Hawkes, of Garendon Park, being selected in the place of two retiring members. The Chairman of Committee, Mr. J. T. Smith, Vice-Chairman Mr. J. Lane, Hon. Treasurer Mr. A. McVinish, and Hon. Sec. Mr. D. Roberts, were all re-elected. The Annual Dinner was held at the King's Head Hotel after the meeting, about thirty members and friends participating in the repast.

KINGSTON GARDENERS'.—The first meeting of this newly-formed society was held on September 30, when a lecture was delivered by Mr. E. H. Jenkins, President of the Society, on "Daffodils." Messrs. Barr & Sons supplied specimens of bulbs illustrating the lecture. After dealing with the evolution of the Daffodil, and mentioning the labours of Leeds, Backhouse, Barr, and Engleheart in producing new varieties, Mr. Jenkins gave full details of the cultivation they require. The chief points dealt with were soils, suitable and otherwise; the superiority of British over continental-grown bulbs; planting in grass; the benefit many varieties derive from association with plants in the herbaceous border or beds and with grass; the stronger growth of deeply-buried bulbs, and detailed directions on forcing. J. T. B.

HEADLEY GARDENERS'.—On September 30 Mr. H. Wright gave the second part of his lecture on "The Potato." Very fine specimen plants of Up-to-Date and Northern Star were brought by some of the gardeners of the neighbourhood. The lecturer remarked that "Up-to-Date" Potato, as shown by the splendid root produced, was steadily improving in spite of the predictions of many that it would gradually deteriorate, while Northern Star, although producing an enormous number of tubers, would never attain great popularity. Being of a peculiar constitution it had a great tendency to grow out and make long underground stems before producing tubers, and this independent of season or soil, as the verdict from the best Potato lands in the country, Dunbar, Edinburgh, Lincoln, the Fens, was substantially the same.

CARDIFF GARDENERS'.—The opening meeting of Session 1904-5 took place at the Sandringham Hotel on Tuesday, October 4, when the President (J. Lynn Thomas, C.B., F.R.C.S., J.P.), occupied the chair, supported by the President of the Cardiff and District Chrysanthemum Society (J. W. Courtis, Esq., J.P.), and a very large attendance of members. Professor Trow, of the University College, Cardiff, delivered a lecture entitled "The Chief Work of Plants," illustrated with lantern views, and from an educational point of view the lecture proved to be highly interesting and was very much appreciated. Mr. T. Clarke, on behalf of the members, presented the President with an engraving of the group of members who attended the Reading outing in August last. Several new members were enrolled.

TRADE NOTICE.

MR. GEO. SPRINGTHORPE, late of West Leigh Nursery, Leicester, has removed to Maycroft, St. Albans Road, Kingston-on-Thames.

Obituary.

EDWARD BENNETT.—This well-known gardener died at his residence at Ash Vale, near Aldershot, on October 8, aged seventy-eight years. Edward Bennett came to the fore in the early sixties as an exhibitor of fruit, &c., from Osberton Manor, Workop, the residence of G. S. Foljambe, Esq. In this capacity he exhibited fruit at the Great International Horticultural Exhibition held at South Kensington in 1866, when a dish of fruit of the Vanilla secured a valuable extra prize. From Osberton he appears to have passed into Enville Hall, Stourbridge, and being greatly interested in the bedding-out system, at that time so popular, he made Enville famous for the extent and elaborateness of the outdoor bedding arrangements. While there he took a great interest in the series of international Potato

exhibitions then being held at the Crystal Palace, and was the means of largely introducing the once popular "Schoolmaster" Potato to notice, though it was said to have been raised by another Mr. E. Bennett, a private gentleman residing near Enville. He ultimately became gardener to the Marquis of Salisbury at Hatfield, and while there applied the system of lime-kiln heating introduced by Mr. Jno. Cowan, in the efficiency of which he became an ardent believer, though it was eventually abandoned. While at Enville, and also at Hatfield, he took a warm interest in horticultural matters, and his services as a judge at flower shows were in frequent request. On leaving Hatfield he became a grower of fruit for market near Potters Bar, and ultimately dropped out of horticultural circles. He was a man of singular activity and tenacity of purpose, his cheery optimism always making him an agreeable companion.

THE APIARY.

All colonies should be put in proper order for the winter as soon as possible. Choose a day that is not too hot, or the bees will be on the wing and a nuisance to the worker. Draw back each frame and examine the ends and bottom bar, also the floor board, for wax grubs, and destroy any that are found. Remove all pollen-clogged frames and allow the bees enough frames only to fill properly—say eight or nine, removing the remainder for extracting, or place in a colony not so well off for food. Do the extracting away from the hives, and after it has been done place the frames in the hives for the bees to clear out, but in no case leave them outside even at a good distance from the hive or robbery will ensue. The colony should not be kept open longer than possible. Should a number of bees be on the frame, hold it in the left hand and brush the bees off gently into the hive with a small brush. The frame of honey taken should be immediately removed and covered over from the bees. Do not scrape the top bars as this allows the bees more room to crawl about. For a covering place next to the frames a piece of calico, with a hole cut in the centre to place on a cake of candy later on. After this has been done add an extra blanket and also several thicknesses of brown paper, running from back to front and from side to side. Make a note as you proceed as to condition of each hive, &c. Have carbolic solution at hand to put cloth down at the entrance in case of "robbing," which should be at once stopped. Plenty of fuel should be at hand as well for the smoker, and a few flakes or lumps of naphthaline put in each hive on the top quilt and also in the back of the hive. Reduce the entrance to enable only a few bees to enter at a time. When the entrance is deep, cover it over with a little queen-excluder zinc to prevent mice from getting into the hive. All roofs should be properly secured for the rainy weather. In damp places the hives will require to be lifted. Rest them on bricks, with pieces of wood on top of the bricks. All feeding in a liquid state should be accomplished as soon as possible, and if the bees do not take syrup fast enough give it them warm. *Expert.*

ANSWERS TO CORRESPONDENTS.

BOOKS: G. H. L. *Elementary Botany*, by Percy Groom, M.A., published by George Bell & Sons, London.

CARNATION DISEASE: S. S. Your plants are affected with eel-worm. Burn the affected plants and sterilise the soil before potting fresh plants.

CARNATIONS: *Dickson.* This appears to be the early stage of the fungus *Helminthosporium*. Send specimens again in a week or two, meanwhile syringe the plants with liver-of-sulphur $\frac{1}{2}$ oz. to 1 gallon of water. This may do good, and can do no harm.

CHESTNUT AND HAZEL: *Selsdon.* If the plantation is intended for coppice, it would be as

well to cut it over if the plants are thoroughly established. If only recently planted, they had better remain until the stems are from 1 to 2 inches in diameter, so that the shoots which come from the stool will be strong and vigorous, and capable of growing into useful pales or rods before they are again cut. Care should be taken that the young shoots are not damaged by rabbits the first season.

CHRYSANTHEMUMS: *J. H. P.* The brown spots and patches on the leaves are caused by the Chrysanthemum "rust" fungus (*Puccinia Hieracii*), which is illustrated and described in the *Calendar of Garden Operations*, obtainable from our Publishing department, price 7½d., post free.

CUCUMBERS: *F. P. Sutton.* The plants have rotted at the collar, probably the result of a fungus, favoured by damp-heat. The roots seem healthy. Send some leaves for examination.

CUTTINGS: *W. J. W.* Your cuttings are too hard; you should have taken them when the plants were growing more freely.

ELM-BARK BEETLE: *H. E. G.* The eggs of the insect are laid early in June, the female burrowing in the bark of the Elm for that purpose. The male insect is present for only a short time before egg-laying commences. Most of the larvæ are full-fed towards the end of June, when some turn to pupæ at the end of their burrows, and the beetles from these pierce the bark and come out from the tree during August. The greater number, however, of the grubs appear to form a little chamber, where they pass the winter, and appear as beetles about the end of May. The maggot is curved, whitish, tapering bluntly to the tail, fleshy, much wrinkled across, and legless. The beetles are black, from an eighth to a quarter of an inch in length, with rounded, rough head and reddish horns.

EXHIBITIONS: *Interested.* At the Royal Horticultural Society's Shows, a firm may exhibit cut flowers and fruits, provided they do not mix them. It causes inconvenience if they are mixed, because fruit and flowers have to be adjudicated upon by different Committees.

GARDENER'S SITUATION: *F. O.* Under the circumstances, we think you should be entitled to a month's wages, but you had better consult a solicitor.

LARCH DISEASE: *G. P.* You can do nothing to combat this disease once it has invaded the trees, and it would be advisable to destroy by burning all those plants affected. The trees will probably not grow out of the disease, which will increase as the trees become older, until they are ruined, at least for practical purposes, though some few may survive if the diseased parts are cut out. Your cold wet subsoil has no doubt a considerable influence in promoting this fungoid growth.

MUSCAT GRAPES: *W. G. P.* Your Grapes are badly affected with the "spot" fungus, *Gloeosporium laticolor*; there are also evidences of shanking in some of the berries. You can do nothing better than destroy all the berries affected with the "spot" disease. Undoubtedly your badly-drained borders are in some degree responsible for the appearance of these diseases.

NAMES OF FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations.—*Shrives.* 2, Norfolk Beeding; 3, Mère de Ménage; 4, Lady Sudeley.—*R. T. Parker.* 1, Annie Elizabeth; 2, Alexander; 3, Dutch Codlin; 4, Lord Derby; 5, Peasgood's Nonsuch.—*Nairn Maltster.*—*W. P. B.* 1,

Mère de Ménage; 2, Lord Burghley; 3, Sturmer Pippin; 4, Lord Suffield; 5, Manx Codlin.—*A. Y. L.* 1, not recognized. This was exhibited at the Apple Congress in 1883, and was thought to be King of the Pippins, which it much resembles, but is not that variety; 2, We dare not attempt to name such poor fruits.—*N. G.* 1, Stirling Castle; 2, Crimson Spire; 3, Waltham Abbey Seedling; 4, Ingestre; 5, Fearn's Pippin; 6, Beurré Rance.—*J. A. Smith.* 1, Royal d'Angleterre; 2, Knight's Monarch; 3, Cox's Orange Pippin; 4, Glout Moreau; 5, Greame's Pippin; 6, Alfriston.—*W. Truster.* 1, Beurré Rance; 2, Bergamot d'Esperen (Nos. 3 and 4 are affected with fungus; see reply to "C. S." in col. iii.).—*F. J.* 6, Kentish Fillbasket.—*E. S. Baker.* 1, Lord Grosvenor; 2, 6, Northern Dumpling; 3, Warner's King; 4, Potts' Seedling; 5, Alexander.—*H. A. Berks.* 1, Hollow-crowned Pippin; 2, Blenheim Orange; 3, Olivier de Serres.—*J. Sparrow.* Not recognised.—*A. W. S.* 1, Duchess of Gloucester; 2, Lady Henniker; 3, Tower of Glamis.—*W. Cunn.* 1, Adams's Pearmain; 2, Fearn's Pippin; 3, Yorkshire Greening; 4, Minchull Crab; 5, Striped Beeding; 6, Grosse Calabasse.—*A. C. W.* 1, a very beautiful fruit of poor quality and very soft; 2, A very nice, crisp and juicy Apple, but no improvement upon many now in commerce. Fruit to pass with honours before the R.H.S. Fruit Committee must needs be better.—*M. E. N.* 1, We should say it is a local variety; 2, Bedfordshire Foundling; 3, Lane's Prince Albert.—*A. M. S.* 1, Pitmaston Duchess; 2, Doyenné du Comice; 3, Passe Crasanne.—*J. Barnett.* A very fine fruit of Blenheim Orange.—*M. W. F.* 1, Warner's King; 2, Small's Admirable; 3, Beurré Clairgeau; 4, Easter Beurré; 5, Chaumontel; 6, Beurré Diel; in 3 and 4 you have two varieties on one tree, which has been grafted at some time or other.—*T. M. N.* 1, Northern Greening; 2, Greame's Seedling; 3, Gipsy King; 5, Passe Colmar. We cannot name varieties of Potatoes.—*G. V.* 1, Waltham Abbey Seedling; 2, Striped Beeding; 3, Wellington; 4, Stone's; 5, King of the Pippins; 6, Bramley's Seedling; 7, Bismarck.—*C. W. T.* 1, Clove Pippin; 2, Minchull Crab; 3, Ribston Pippin; 4, not recognised; 5, Wellington; 6, Kentish Fillbasket.—*W. R. C.* 1, Beurré Hardy; 2, not recognised; 3, Conseiller de la Cour; 4, Beurré Diel; 5, Colmar d'Été; 6, Josephine de Malines.—*W. H. F.* 1, Yorkshire Beauty; 2, Annie Elizabeth; 3, Cellini; 4, Dean's Codlin; 5, Madame Trévye.—*Fruit.* 1, Cheshunt Pippin; 2, Crimson Spire; 3, fruit rotten; 4, Court Pendu Plat.—*G. Wilkinson.* 1, Pomona; 2, rotten; 3, Cox's Orange; 4, Lord Suffield; 5, Wealthy; 6, Golden Noble.—*L. B. W.* 1, Lincoln Pippin; 2, Hollandbury.—*R. C.* 1, Hazel; 2, Broom Park; 3, Gansell's Bergamot; 4, Duchess d'Angoulême; 5, Warner's King or Nelson's Glory.—*F. S.* 1, Seckle; 2, Iris Greigore; 3, Winter Nelis; 4, Doyenné Grise; 5, Fondante de Cuerné; 6, Marie Louise.—*Felix.* 1, Fondante Thirriott; 2, Kerry Pippin; 3, Scarlet Nonpareil; 4, Wellington; 5, Beauty of Kent.—*R. E. C.* 1, Northern Dumpling; 2, Sturmer's Pippin; 3, Lemon Pippin; 4 and 6, King of the Pippins; 5, small, not recognised.—*A. G. R.* 1, Jolly Beggar; 2, Williams' Favourite; 3, Sturmer; 4, Flower of Kent; 5, Depling Pippin; 6, Stirling Castle.—*W. H. E.* 1, Tower of Glamis; 2, Warner's King; 3, Blenheim Orange; 4, Cox's Pomona; 5, Golden Scarlet Spire; 6, Hollandbury.—*G. W. B.** 1, Blenheim Orange; 2, Cox's Orange Pippin; 3, Deux Ans; 4, Magnum Bonum; 5, Prince Albert; 6, Wellington; 7, Beurré Diel.—*G. K.** 1, Josephine de Malines; 2, Small's Admirable; 3, Beurré Baltet père; 4, Buerré d'Amanlis; 5, French Crab; 6, Genderbien; 7, Warwick Pippin.—*A. C.* Kindly send another fruit of your Pear; that received is much over-ripe.—*J. H. B.* The Apple is Peasgood's Nonsuch. The specimens of Plums are not sufficient, and they should not have been packed with the Apples. For names of plants see below.

* "G. W. B." and "G. K." Your fruits were mixed. Each set of numbered fruits should be sent in a separate box.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to

consult the following number.—*G. W.* Bougainvillea glabra.—*S. T.* What wretched specimens! Have mercy upon us. 1, probably a Salvia—no flower; 2, Origanum vulgare; 3, Savory—a pot-herb; 4, not recognisable; 5, Sedum carneum variegatum; 6, not recognisable.—*J. C.* Rhus Toxicodendron; be careful how you handle it.—*Constant Reader, N. Wales.* The Fern is Alsophila excelsa; the leaf Hymenocallis (Pancratium) fragrans. The red markings on the under side of the leaf are probably caused by thrips or other insects in some stage of their growth.—*D. J. H., Bristol.* The scarlet-and-black seeds are those of Abrus precatorius, a leguminous plant common in India. The bright-coloured seeds are used for making necklaces. They are also said to have been formerly used as weights by Indian diamond dealers. The bulb would probably be Hippeastrum equestre. Send flowers when this becomes possible.—*T. W. R.* They are all forms of Crataegus coccinea.—*W. P. L.* Akebia quinata.—*M. Bros.* Gilia tricolor.—*S. S.* Chrysanthemum frutescens.—*H. W.* 1, Aster Novi Belgii lævigatus; 2, A. puniceus pulcherrimus; 3, A. ericoides; 4, A. diffusus horizontalis; 5, A. lævis; 6, Polygonum polystachyum; 7, Fuchsia Riccartoni; 8, Pentstemon barbatus var.; 9, Aster Amellus; 10, Erigeron multiradiatus.—*R. A.* Catasctum tabulare.—*A. B. Y. Z.* Cypripedium (Selenipedium) longifolium; 2, C. Charlesworthii, very prettily marked; 3, Dendrobium chrysanthum; 4, Cœlogyne Massangeana.—*W. W., Aberfeldy.* Euonymus europæus. The insect is Sirex gigas.—*G. F. L.* The Crotons are probably kept in too high a temperature, especially at night. It has induced growth before the proper growing time, and the root-action does not accord. When actively growing in spring they would like the temperature of 75° to 90° you mention.—*V. A. R.* 1, Cyperorchis elegans, often called Cymbidium elegans; 2, Cymbidium tigrinum; 3, Oncidium barbatum; 4, Miltonia Regnellii purpurea; 5, M. Russelliana; 6, Stelis micrantha.—*A. M., Frome.* 1, Linaria purpurea; 2, Heuchera sanguinea; 4, Anemone fulgens.—*W. S. M.* 1, the large leaf Begonia nebulosa; 2, Begonia Louise Cluson, or very similar varieties. The Begonias of the Rex section are now so numerous that it is difficult to be certain about any but the most distinct.—*F. J.* 1, Thuya nootkatensis; 2, Juniperus sinensis; 3, Thuya orientalis; 4, Clethra arborea; 5, Cupressus Lawsoniana.—*A. M.* Trachelium cœruleum.—*H. W. W.* We cannot undertake to name specimens which have no horticultural value.—*Brown-paper parcel, red ink address, no name.* 1, Agrostemma coronaria; 2, Pelargonium, we cannot name the variety; 3, Viburnum Tinus.—*S. W.* 1, Pyrus intermedia; 2, Brugmansia; cut the plant hard back.—*A. F.* Seems to be Crataegus Crus-galli, but there are no thorns on the scrap you send.—*J. H. B.* 1, Probably Ailanthus glandulosa; 2, Kniphofia (Tritoma) uvaria; 3, Corylus Colurna; 3, Sedum spectabile.

PEAR CRACKING: *C. S.* This appearance is due to a fungus, Fuscladium dendriticum. In the winter spray the trees with a solution of sulphate of iron, and in the spring, when the flower-buds begin to open, spray with diluted Bordeaux-mixture, repeating this when the petals of the flowers are dropping, and again when the fruits have become about the size of Peas. The fruits are immature, but the variety is probably Hessele or Hazel.

THE RECENT FRUIT SHOW: Correction. Mr. C. Ross obtained the 1st prize in the class for Apple Lane's Prince Albert, and 4th prize in the class for any other variety of Pear than those mentioned in the schedule, showing the variety Seckle.

COMMUNICATIONS RECEIVED.—*Watson & Scull*—*M.* Bourguignon—*W. P. W.*—*H. J. E.*—*H. J. V.*—*W. C.*—*Prof. Robinson*, Gray Herbarium, U.S.A.—*M. Jarry* Desloges—*A. D. S.*, Johannesburg—*S. W. F.* (photographs)—*A. W. S.*—*Dr. Perez*, Tenerife.—*D. H.*—*G. S. B.*—*W. S. M.*—*J. G.*—*G. M.*—*D. I.*—*J. R. F.*—*C. W. B. H.*—*T. A. S.*—*S. W. F.*—*G. K.*—*Dr. R.*—*J. W. V.*—*J. S.*—*Constant Reader*—*E. M.*—*W. H.*—*J. S.*, Craigend—*Old Reader*—*H. G.*—*E. H. J.*—*C. R.*—*A. K.*—*J. B.*—*Putney* and Wandsworth Chrysanthemum Society—*J. C.*—*R. D.*—*J. J. W.*—*F. H. M.*—*Ambrose & Son*—*W. H. C.*

PHOTOGRAPHS RECEIVED AND UNDER CONSIDERATION.—*G. W. Miller.*

(For Markets and Weather, see pp. x. and xi.)



ELÆOCARPUS CYANEUS, FROM STRAFFAN HOUSE GARDENS, KILDARE; FLOWERS WHITE,
BERRIES PURPLISH-BLUE.



THE Gardeners' Chronicle

No. 930.—SATURDAY, Oct. 22, 1904.

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MAY IN MY FLORIDA GARDEN.

IN May the dry season of Florida reaches its climax. After April 7 we had only a few slight showers, which darkened the earth and wetted the leaves, but very little reached the roots of the suffering plants. On high dry land the ground only retains its moisture if constantly stirred. Heavy dews fall at night. In the early morning hours the foliage of the plants is soaked with moisture. This explains why most of the vegetation, particularly that which is indigenous, does not show signs of suffering. The Magnolias, Loblolly Bays [*Gordonia*], Hollies, American Olives [*Elaeagnus*], Wax-Myrtles [*Myrica cerifera*], Florida Red Cedars [*Taxodium distichum*], Cabbage-Palmettos, and other native plants look as beautiful now as ever, and some are in all their glory. Orange groves, however, were not a beautiful sight before the last shower. The trees had rolled up their foliage, many of the leaves were falling and, what is still worse, the fruit dropped badly. Red-spider was the main cause of the falling of the leaves. Several days after the rain the trees again looked very fine, and where sufficient fertiliser had been used they assumed a very dark-green colour. Under the slate roof of my *Amaryllis* shed the dew could not strike the plants suffi-

ciently, and the red-spider soon destroyed all the foliage, while the *Amaryllis* not protected retained their foliage all the time. In the driest parts of the garden there is woe. All plants not deeply rooted are fainting in the sun—poor, hopeless hanging leaves, that tell their thirst in vain. *Brunfelsia Lindeni*, *Tabernaemontana coronaria* fl.-pl., *Datura suaveolens*, and *Camellia japonica* are suffering most. All recently-planted things, if not well watered, perish in the dry season. Plants set out during this period invariably die if not constantly watered and shaded from the fierce rays of the sun. One can perceive now which are the sun-worshippers among the flowers.

The gorgeous *Allamanda Hendersoni*, the scarcely less beautiful *A. nerifolia* and *A. Schottii*, with masses of large golden-yellow blossoms among the dark green, glistening foliage, are very striking; while the huge, deliciously perfumed flowers of the many varieties of *Magnolia grandiflora*, gleaming among the abundant, noble, glossy foliage, are like a love-poem. *Aristolochia elegans*, *A. cymbifera*, *A. brasiliensis*, all the *Thunbergias*, *Oleanders*, and many others, seem to revel in the sunshine—they all are flowering profusely.

May! The very word speaks to many of verdure, dewy freshness, cool shade, refreshing and abundant showers, and invigorating out-of-door work. But in Florida this is different. The word seems to be a dream. May in Florida is the hottest and driest month of the year, the most oppressive and tiresome. But even in this dry season the climate is almost perfect—the very ideal of a climate. A cool breeze is constantly evident. Many invalids have to thank the balmy climate of Florida for prolonging their lives, the great charm of this climate being the refreshing breezes blowing almost every day, a calm, still day being the exception. The evenings and nights are glorious—very cool, very charming. These nights have a splendour that seems strange to northern eyes. The sky does not appear so high, so far away as in the North; the stars are more numerous, larger, and much brighter. These beautiful, solemn, silent nights filled me, I remember, with a sensation of awe, different from anything which I had ever experienced. And the songs of the mocking-bird and the cardinal-rebird, and the call-notes of the "chuck-wills-widow," imbue these nights with an enchantment entirely their own.

In spite of the long drought flowers were quite abundant in my garden during May. The *Crinums*, invariably called "Lilies" here, were flowering constantly, and all were very showy, stately plants, producing gorgeous heads mostly of deliciously scented flowers. The finest of all the *Crinums* flowering in May is *C. Moorei*, a plant of stately port, needing, however, a good deal of coaxing in Florida. *C. longifolium* had lots of ripe fleshy seeds early in May. *C. asiaticum* was never out of bloom for several months. Though the flowers are not so large as those of *C. Moorei*, the plant itself is a very conspicuous object in its tropical mass of foliage, and the flowers are powerfully fragrant. *C. latifolium*, *C. yemense*, *C. erubescens*, *C. Sanderianum*, *C. crassifolium*, *C. abyssinicum*, all flowered more or less during May, though their main blooming period is after the rainy season has begun.

FLORIDA FRUITS.

Chickasaw Plums (*Prunus angustifolia*) were ripe during the middle of the month, and they continue until the first days of June. The small, bright red, thin-skinned fruits have a very agreeable flavour. These Plums occur abundantly on old deserted homesteads, where they usually form dense thickets. Hicks' and Stubbs' Mulberries ripened throughout the month, and though much smaller than the common Mulberry, they have a much better flavour. The sour Orange-trees on my place are still laden with their rough fruits, which are largely used for marmalade; while the bitter sweet Orange is now at its best, the beautiful medium-sized fruit with a slightly bitter taste being really very delicious just now. Ever-bearing Lemons are constantly ripening their large fruits, which are used in the same way as the Lemon of commerce. Dense bushes of the Goumi (*Elaeagnus longipes*) were covered with elongated bright red drupes speckled with minute brown dots. When fully ripe this fruit has a very pleasant taste, and makes a fine jelly. But the most delicious fruit of the early days of May was the tropical Surinam Cherry (*Eugenia Micheli*). Some of the larger bushes, being protected from cold by overhanging branches of trees, were covered with the very beautiful ribbed, glassy-scarlet fruits as large as small Plums, with a delightful spicy acid flavour. In the woods Buckle-berries and Blue-berries ripened in enormous quantities. Vegetable-growers were shipping their last Cabbages and Potatoes early in the month, while during the last few weeks the shipping of Onions and particularly Tomatoes occupied all their time.

JAPANESE SHRUBS.

Of the Japanese shrubs the Gardenia or Cape Jasmine makes always a grand show in May, being in full bloom for at least three weeks. The fragrance of the waxy-white flowers is delicious, but it is almost overpowering where many of the shrubs are grown near the house, becoming oppressive when the glaring rays of the sun strike the fading blossoms. The pendulous creamy-white, cup-shaped flowers of *Cleyera japonica* are borne in bunches among the fine oblong evergreen foliage. They are deliciously but not strongly fragrant, opening usually in the early days of May, and lasting about ten days. These shrubs, or rather small trees, assume in my garden a height of about 10 to 15 feet, being of fine pyramidal form. Very often the foliage shows a deep purplish hue, and the old leaves are bright red. This plant grows well on high dry fine land. *Illicium religiosum* is another shrub of great merit. The lower branches are spreading, the upper ones grow upright, and the bruised leaves emit a strong aromatic fragrance. They are flowering profusely during May, but the pendulous, yellowish, cup-shaped blossoms are scentless.

Hydrangea Hortensia is another Japanese shrub flowering in May. The large flower-heads are intensely indigo-blue, not rosy-red as in the north. Quite a number of very large specimens of *Cycas revoluta* are also in bloom, and their flower-cones are always exceedingly interesting. Hall's Honey-suckle showed still some scattered blossoms; but the Star Jasmine (*Trachelospermum jasminoides*) has been a sheet of white

for several weeks, pervading the air, particularly during the evening, with a very delicious perfume. Near it, on the verandah, the curious large flowers of *Aristolochia elegans* are produced abundantly; but they are not conspicuous, and are invariably overlooked by visitors, though they always create quite a sensation when pointed out to them. *Ipomœa digitata* and *Solanum Wendlandi* began to flower profusely by the end of May, while the slightly fragrant *Solanum azureum* has been in blossom some months. The bunches of glossy, deep-red berries among the foliage and flowers are an additional charm to the plant, which is a fine climber. The *Allamandas* already referred to are a glory. *A. Williamsii* has not as lustrous foliage as the three species mentioned, and the flowers are smaller and suffused with brown outside. It has been in full bloom during the last two months. *Clerodendron Thompsonæ* (C. Balfouri), here called "Bleeding-heart," is always in flower, its pure white calyx and blood-red corolla being very conspicuous. It is one of the most beautiful tropical climbers of our gardens, and soon covers a large space when well fertilised.

Other plants in bloom near the house are *Tibouchina semidecandra* (*Pleroma macrantha*), of which I have large bushes 6 to 8 feet high. The leaves are abundant, hairy, strongly-nerved, and the flowers are large and of a shining clear purple-blue and very striking. *Thunbergia erecta*, with large funnel-shaped deep blue blossoms, shows a very conspicuous deep yellow eye in the throat. They are mostly hidden among the foliage of the lower branches, and are lavishly produced. *Thunbergia grandiflora* is a tall climber with fine tropical foliage and pure white flowers. A large specimen of the Weeping Mary (*Russelia juncea*) is scarcely ever out of flower, but it seems to revel in the sunshine, opening its coral-red flower-tubes constantly on long arching flower-spikes. *H. Nehrling, Florida.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

MECONOPSIS PUNICEA.*

This is another of Mr. Wilson's introductions to the nurseries of Messrs. James Veitch & Sons, and in our opinion it is scarcely if at all inferior in beauty to the magnificent *M. integrifolia* figured in the issue for October 1 last. *M. punicea* was first described by the lamented Russian botanist, Maximowicz. Our own illustration (fig. 130) is from specimens that flowered in Messrs. Veitch's nursery, compared with the specimens in the Kew herbarium and with Maximowicz's description and figure. The leaves are radical, long-stalked, lanceolate or ovate-lanceolate, tapering at both ends, entire, covered with coarse, straggling, yellowish hairs. The flowers are borne on slender, densely villose scapes, 6 to 7 inches long, nodding at the apex, and bearing solitary reddish-purple flowers 6 inches across or more. The sepals, two in number, are deciduous, and therefore not shown in our illustration. The petals are normally four, broadly ovate oblong, rich carmine or red-

dish purple, stamens numerous, yellow, the outermost shorter than the ovary, the innermost equalling or scarcely exceeding it; filaments dilated, petaloid; anthers yellow, innate [pollen-cells globular, echinate. W. G. Smith.] In some of Wilson's specimens, as also in the flowers grown at Combe Wood, the flowers are semi-double, there being four lanceolate petals within the outer ones, as shown in our illustration.

The plant, according to statements made in a letter of Wilson's, grows in damp meadows amid grass and low shrubs shaded from the direct rays of the sun, and at an altitude of 11,500 to 12,500 feet. From these details there can, we think, be no doubt that we have here a very fine addition to our hardy annuals and alpine plants. The tendency to become double will doubtless be accentuated under cultivation, so that we cannot but congratulate Messrs. Veitch and their intrepid collector on this splendid addition to our gardens.

Our illustration was drawn by Mr. Worthington G. Smith from living specimens. The leaf and flowers are of the natural size. To the right, beneath, a section through the flower is shown as well as a detached stamen and the pollen-grains.

The genus *Meconopsis* differs from *Cathcartia* in the pod, which opens by pores and not by long valves. It contains some noble species, distinguishable one from the other by their habit, foliage, inflorescence, and colour of the flower. Some are quite dwarf, such as *M. horridula*, *M. bella* (Prain), Sikkim; *chelonifolia*, with much-divided foliage, from Szechuan. Some have entire leaves, such as *M. grandis* (Prain), from Sikkim, with solitary purple flowers, not yet introduced so far as we know; *superba* (King), a noble species, which also awaits introduction; *principis* (Franchet), from Tibet, like our present species, but with smaller and erect flowers; *integrifolia*, *simplicifolia*, and others.

Among species with divided foliage are *M. bella*, *paniculata*, *Wallichii*, *heterophylla*, and *crassifolia*, the two last from California. Among the raceme or panicle-bearing kinds are *aculeata*, *paniculata*, *Wallichii*, *superba*, and others; whilst *bella*, *grandis*, *punicea*, *simplicifolia*, and others like our own *cambrica*, have scapes bearing solitary flowers. As to the colour of the flowers, blue or purple prevails in *horridula*, *aculeata*, *bella*, *Wallichii*, *grandis*, and others; crimson in *principis*, *punicea*; yellow in *integrifolia*, *cambrica*, *heterophylla*, and others. We mention these species not with a view of furnishing a complete list, but only to indicate to the cultivator what a choice of fine species he has before him. Some of course are already well known in cultivation. *M. T. M.*

With reference to the above-named species of *Meconopsis*, Mr. Wilson wrote to Messrs. Jas. Veitch & Sons, in a letter dated Kiating, Western China, September 25, 1903, as follows:—

"I have just returned from a forty-four days' trip to the north-west corner of Szechuan. Great as was my success at Talién-lu, I think I may claim another equally so, for besides obtaining seed of *Meconopsis integrifolia*, I have procured some of another species with red flowers, only slightly inferior to it. This latter species I believe to be *Meconopsis punicea*. A note made in the Kew Herbarium reads 'Meconopsis punicea, Potanin! Province Szechuan Septentrional, 1885.' On scanning Bretschneider I found Potanin was travelling on the Kansu border in 1885. Armed with these scraps of information I set off on a journey of about 400 English miles, which lasted from August 10 to September 25 inclusive. Travelling *via* Chung-lu, Kuan Hsien, and from thence following the gorges of the Miu river, I reached the border town of Sung Pan on August 27. Three days north of this town, on a pass 12,500 feet high,

which separates the Province of Szechuen from that of Kansu, and which forms the watershed of the Yellow and Yangtze rivers, I found the object of my search. It and *Meconopsis integrifolia* were growing in company—the only species of the genus there.

The largest flowers of *Meconopsis punicea* when pressed flat measured $6\frac{1}{2}$ inches in diameter; the colour is dark scarlet. The flowers are solitary, nodding, on scapes $1\frac{1}{2}$ to 2 feet high, the ovary, scape and leaves being covered with shining yellow hairs. *Meconopsis integrifolia*, on the other hand, has ten to twelve flowers springing from one axis—in short, the difference between these two species is the same as that between the Iceland and Opium Poppies."

FRUIT REGISTER.

APPLE "LANGLEY PIPPIN."

THIS new Apple has fruited here for the first time this season, and, so far, I consider it to be the best early Apple we have. It commenced ripening during the last week in August, and some of the fruits were used then for dessert; the others were stored in the fruit-room. To-day (September 24) I have tested its flavour against all the other early varieties we have here at the present time—these comprise Lady Sudeley, Worcester Pearmain, Duchess's Favourite, Duchess of Oldenburgh, Oslin, Devonshire Quarrenden, Williams' Favourite, and Early Joe—and I find Langley Pippin superior in flavour to any of them; the nearest approach to it is Early Joe, an American variety seldom seen here. Mr. Gladstone, Beauty of Bath, Early Margaret, Red Juneating, and White Juneating are all past. James Grieve and St. Edmund's Pippin are not yet ready; they want ten days or more to ripen. Langley Pippin is very similar in growth, foliage, and appearance of the fruit to the better-known Allington Pippin, but is quite distinct from it, as the latter variety will not be ripe for several weeks. *W. H. Divers, Belvoir Castle Gardens, Grantham, September 24.*

THE LOGANBERRY.

This fruit appears destined to prove a great acquisition to our list of hardy fruits, on account of its free-growing and free-fruiting habit.

During the present season the fruiting shoots of the plants in the garden here have been literally covered with fine fruits, many of which attained a length of $1\frac{1}{2}$ inch. They are very similar in appearance to Raspberries; so much so, indeed, that most persons remark on seeing them for the first time, "What fine Raspberries!"

The fruits are more acid than the Raspberry, and seem better adapted for culinary purposes than for dessert, although when fully ripened they are by no means to be despised for the latter purpose, as they possess an agreeable flavour quite distinct from that of other fruits.

They have been greatly appreciated in the culinary department of this establishment for the purpose of mixing with Raspberries in the making of preserve, the resulting product being considered superior to that made of the latter fruit alone.

The shoots of the Loganberry bear a strong resemblance to those of the common Bramble, growing very strong when the roots are well supplied with manure, which is very necessary in order to obtain good results. *R. W. Dean, Wainsford Gardens, Hants.*

MONARCH PLUM.

This good September Plum is not grown so extensively in private gardens as it deserves to be, seeing that the tree is a strong grower and a free bearer, the fruit of fine size and excellent quality, handsome in appearance, of purple-black colour, and carrying a heavy "bloom." It is one of the finest Plums of recent introduction. This year

* *Meconopsis punicea*, Maximowicz, *Flora Tangutica* (1889), fasc. 1, p. 35, tab. 23.—Folius lanceolatis indivisis; scapis unifloris; floribus coccineis pendulis; staminibus circiter 30, ovarium setosum vix aquantibus. Tibet, Orient. Szechuan, Maximowicz loc. cit. Szechuan, alt. 11,500, 12,500 ped., in pratis humidis umbrosis. Wilson!

pyramids three years old from the bud carried a good crop—considering their age—of firm fruits. Subjected to any form of training—espalier, bush, or pyramid—the Monarch is a free-bearing variety, and one to be relied upon for yielding a good remunerative crop nearly every year. When it is grown in pyramidal form, the young growths should be shortened in July, as much with a view to promote the formation and development of fruit-buds as to regulate the balance of growth and formation of the individual trees. Pyramids grown in close proximity to the main

of the fruit. It is an Apple of medium size, oblong form, ribbed at the top around the depressed eye, and with a short stalk set in a shallow basin. Colour yellow flushed and streaked with red. Flesh white. Ripens in August.

TITTENHURST, SUNNINGHILL.

This fine estate was formerly the property of the late Thomas Holloway, who, in the early days of his possession, took considerable interest in

not get a sufficient supply of water, and in the second place that they are allowed to get hampered with a lot of dead or useless wood. Consequently the trimming of the fine trees at Tittenhurst is vigorously carried out. Cartloads of useless stuff have been cut out of some of them, and the work is continually kept up, some of the rarer specimens being tended by Mr. Lowinsky himself. The effect of this trimming away of the damaged lower branches of the giant *Araucaria imbricata* was remarkable, as in some cases, after the decayed lower branches were



FIG. 126.—TITTENHURST: VIEW IN THE GARDEN.

walks in kitchen and fruit-gardens would not fail to excite the admiration of all who saw them laden with ripe fruits in September. As a market Plum the Monarch has no rival, the well-known variety *Victoriacom* next. *H.W. Ward, Rayleigh.*

APPLE TITOOKA.

M. Charles Baltet writes in the *Bulletins d'Arboriculture, &c.*, in praise of the Russian Apple above named. Mr. Gibb, a Canadian arboriculturist travelling in Russia, met with an orchard which supplies the markets of Moscow, although the cold is sometimes so intense that the mercury even freezes. M. Baltet recommends the variety on the ground of its hardihood, fertility, and for the beauty and excellence

laying-out and planting the natural slopes of the hillside on which the commodious dwelling stands. Towards the latter part of the then proprietor's time the gardens, however, were allowed to fall into a very rough condition, until about two years ago, when the estate was purchased by T. H. Lowinsky, Esq., an enthusiastic gardener and plant-lover, who has made the renovation of the fine trees and Conifers, and the remodelling of the gardens and pleasure-grounds, his chief relaxation and amusement. Mr. Lowinsky holds that the two chief reasons why so many rare Conifers and other trees when they reach a certain stage fail to grow so freely as they did in their younger days, and become more or less shabby, are primarily that they do

removed, new growths appeared on the basal part of the trunks, and bid fair again to furnish the lower part of the trees with fresh young branches. On the sandy soil *Araucaria imbricata*, of which there are a good number of gigantic specimens, have thriven remarkably well, and have borne cones with perfect seeds, from which a bed of seedlings has been raised. Of one interesting pair, the male is in flower, and there are new and old cones on the female; from the old ones fine perfect seed being shed.

From the terrace in front of the mansion and conservatory sloping green banks descend to the first level, which is laid out as a geometrical flower-garden, beautiful with showy and fragrant flowers at the time of my visit. Thence by gentle

slopes the grass extends to the lower level, and down the centre runs a broad walk skilfully planted on either side with fine variegated Hollies, Golden Yews, and other shrubs; Roses and other flowers being good, and beds of show perennials effectively placed.

From the higher ground the charming effect of the noble Conifers is very striking. Planted many years ago, the stately trees have now assumed gigantic proportions, and their effect is altogether different from that of the smaller trees usually seen in gardens. Here and there, rising pillar-like to the height of 30 feet or so, are grand examples of *Thuja gigantea*, *Libocedrus decurrens* (fig. 127), of a vivid green from base to tip; *Abies concolor*, *Cedrus atlantica*, and other blue-tinted Conifers of large proportions are striking objects; *Abies Pinsapo*, *A. Nordmanniana*, *Sequoia gigantea*, and giant *Araucaria imbricata* planted two or three together, the huge pyramids of *Cupressus nootkatensis*, varieties of *C. Lawsoniana*, and others of similar growth; the columnar Junipers and representatives of most rare Conifers, all combine to make a delightful garden scene.

Cunninghamia sinensis, over 20 feet in height, and with spreading feathery branches, is probably the finest tree of its kind in the open-air in England. It is a perfect and densely-branched specimen, the peculiar shining green of its foliage rendering it a very conspicuous object.

Other grand specimens noted were *Cephalotaxus pedunculata*, *Cupressus obtusa pygmæa* (a very old and perfect specimen), some fine Cedars, &c. Pyramid and standard variegated Hollies of great size, and especially the "Golden Queen," are effectively planted in great quantity, and with the bright yellow of the Golden Yews and *Cupressus Lawsoniana lutea* they give masses of bright colour. One large pyramid Holly is remarkable in that it has patches of silver and patches of gold variegation intermingled.

The slopes beside the mansion are planted with Roses and other flowers, and permanent shrubberies. In the bottom on one side, in a sheltered nook, is a plantation of Bamboos, *Arundinaria japonica* (*Bambusa Metake*) giving broad green foliage, and the yellow and black stems of the two other kinds contrasting well. Near at hand are some fine specimens of Camellias planted out. They are of good size, but still in the experimental stage. Japanese Maples are to be still more extensively grown, and it is intended to plant a sheltered border with as many species of Bamboo as can be obtained. Most of the beds and borders in this remarkable garden have permanent edgings of clipped Yew. One such border is planted with perhaps the greatest variety of flowering shrubs ever got together in anything like the space, many of the subjects being of kinds not usually met with planted in the open ground. Among them are *Azalea indica*, *A. obtusa*, *A. amena*, various Himalayan and alpine *Rhododendrons*, Camellias, all the species of *Skimmia*, *Kalmias*, some of the prettier *Berberis*, a good collection of *Spiræas*, and generally every pretty shrub available at the time of planting. All are now doing well.

From the east front another broad walk through well-filled flower gardens, backed by *Rhododendron* beds, extends to the fountain and basin of Water-Lilies in the bottom. In the beds a fine lot of the new dark-coloured *Heliotropes* are showy and fragrant; the *Cannas* are bright and effective, and beds of *Pelargoniums*, *Marguerites*, *Celosias*, *Lobelias*, &c., densely set with flower. On one side is a quiet nook of giant *Pseudotsuga Douglasii*, *Cedrus Deodara* and *atlantica*, from which passes a cool, shady walk beneath Limes, Oaks, and other trees, with an undergrowth of *Rhododendrons* and other flowering

shrubs. This leads to the croquet lawn, on the bank of which a large fallen Elm-tree is utilised by having seats cut in it for the accommodation of the players. Here the trees are Sweet Chestnut, with one very fine Tulip-tree.

Next comes the Japanese tea-house, with flower garden in front. The interior is fitted with wonderful specimens of art in furniture,

Carnation *Souvenir de la Malmaison*; the second and third with *Crotons*, *Dracænas*, *Caladiums*, *Begonias*, &c.

The long corridor connecting the ends of the houses had a brilliant show of flowers borne on the *Pelargoniums* and other greenhouse plants, together with *Ornithogalums* and other Cape bulbs.

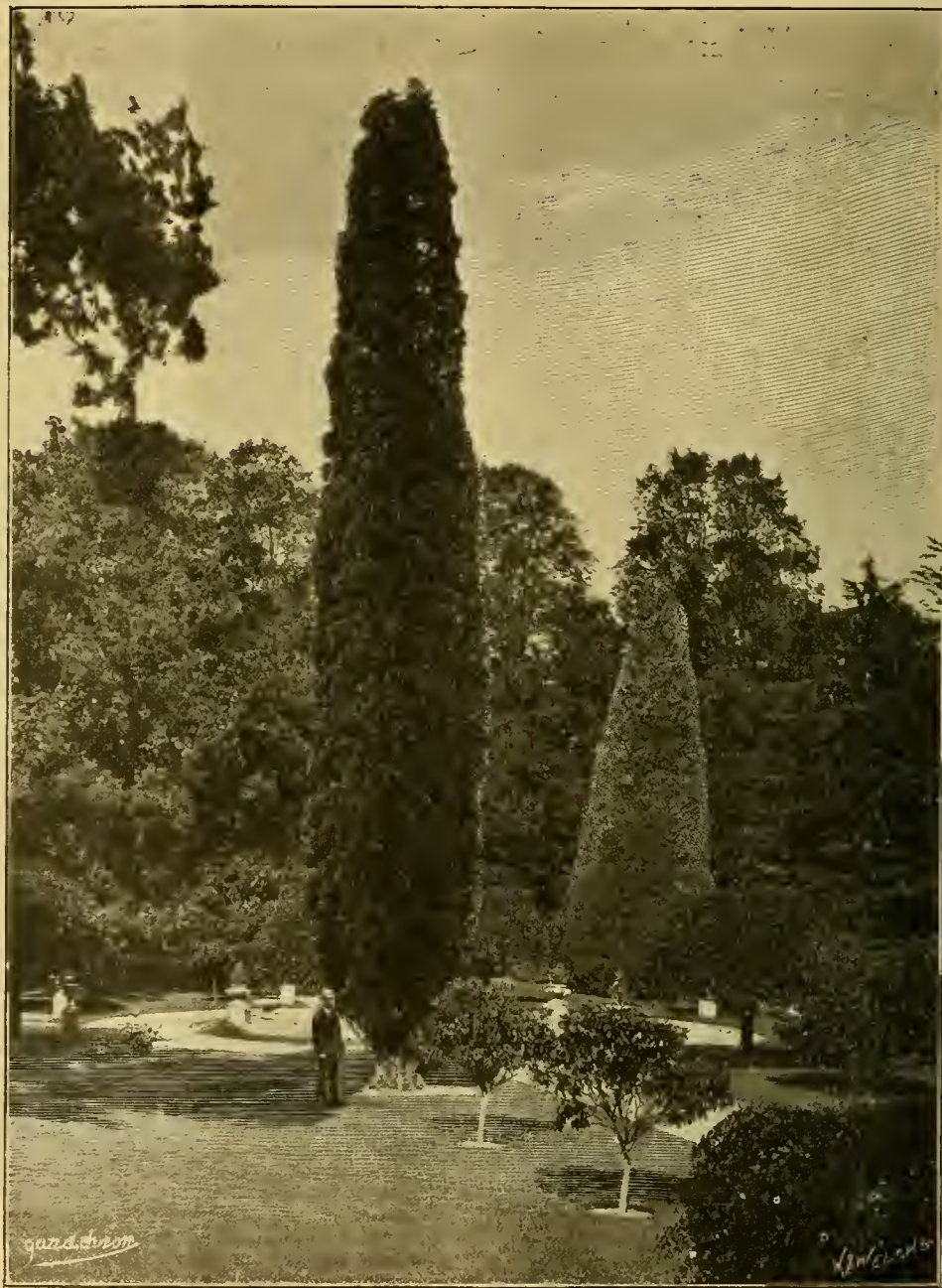


FIG. 127.—LIBOCEDRUS DECURRENS IN THE GARDEN AT TITTENHURST.

decorations, and pictures brought from Japan, some of them of great value. Some of the needlework pictures are very elaborate and clever, and one representing gold fishes with flowering *Wistaria* overhead is a wonderful work of art. Passing between well-filled herbaceous plant borders come the

PLANT HOUSES.

These are used principally for the cultivation of decorative plants and for fruit growing.

The first house is filled with large plants of

The smaller range contained a fine batch of *Poinsettias* and *Begonia Gloire de Lorraine*. One house was filled with *Orchids*—*Cattleyas*, *Lælias*, a good lot of *Calanthes*, *Dendrobiums*, and other showy kinds. The next had cool-house *Orchids* on one side.

The first vinery had a good crop of *Lady Downes'* and *Muscat*; the second *Madresfield Court* and *Gros Colmar*; and the third *Black Hamburg* and *Foster's Seedling*.

The kitchen and fruit gardens are said to have been very satisfactory this year, all the fruit-trees

bearing well; Apples and Pears being especially good. The Plums also on the south wall were finely cropped, and outdoor Nectarines and Peaches good. A large number of well-grown Chrysanthemums also occupied quarters in the kitchen garden.

Some time ago Mr. Lowinsky secured the services of Mr. Joseph Timson as head gardener, and his energy and practical knowledge have gone far to make successful work of the recent great improvements.

row of thirty sets of Northern Star, grown under the same conditions, gave only 20 lb., and a small sample. Haulm-growth was weak and stunted.

The most interesting test of cropping merits of numerous varieties was one of a personal kind, conducted by me with tubers obtained from diverse growers, the tubers ranging from 4 oz. to 9 oz., which were planted singly, after being robustly sprouted, 4 feet apart, on slightly raised and well-prepared mounds. The soil was composed chiefly of road-sweepings mixed with old pasture loam. The

FLORISTS' FLOWERS.

A SELECTION OF SINGLE-FLOWERED DAHLIAS.

THE twelve best single Dahlias, which will give general satisfaction in the garden, and are effective as cut flowers for the table, are:—

Miss Morland (rich red).

Polly Eccles (buff yellow, with red centre).

Victoria (white and red striped).

Serita (crimson purple, with darker centre).

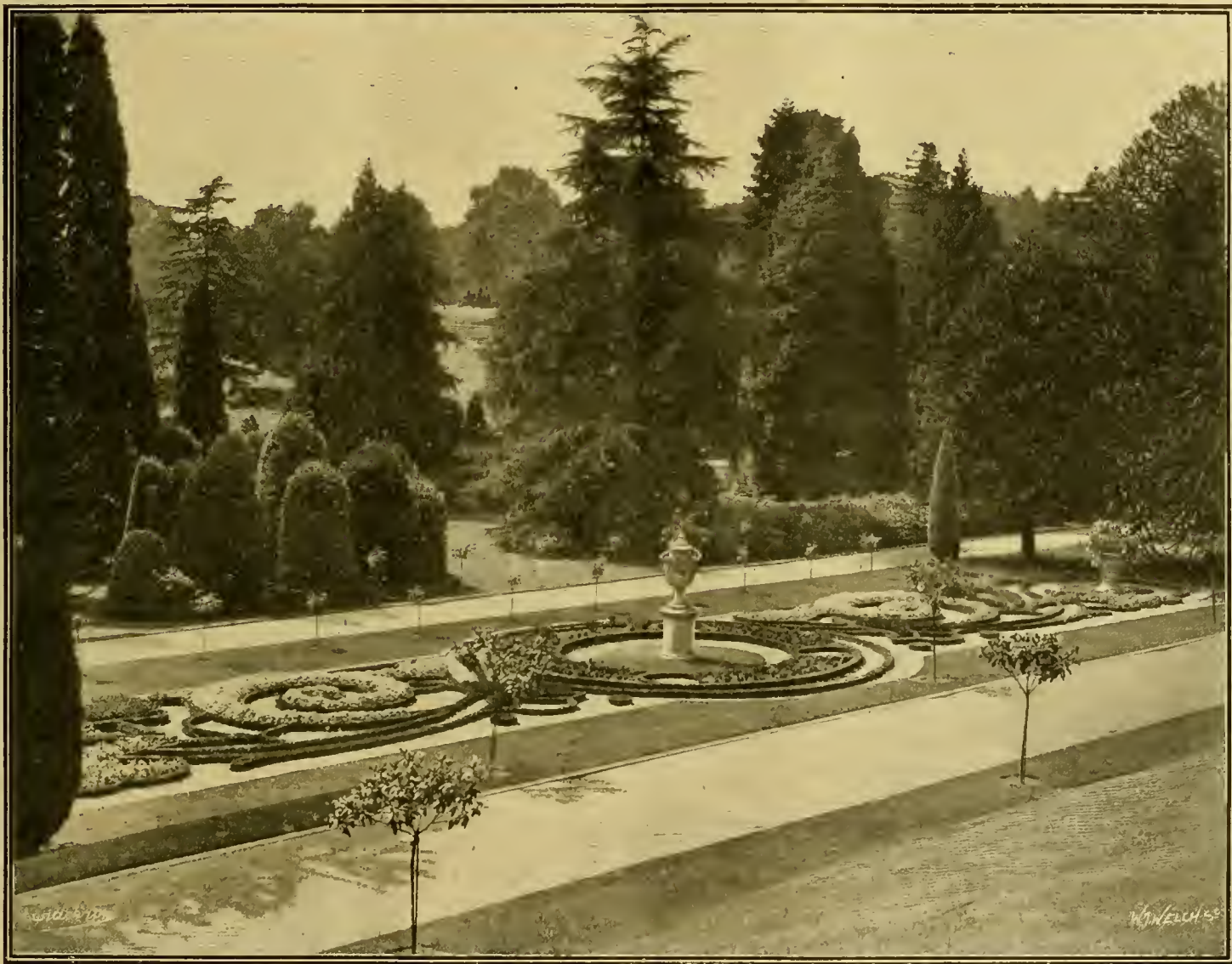


FIG. 128.—TITTENHURST: THE FORMAL FLOWER-GARDEN.

VEGETABLES.

THE FACTOR POTATO.

THIS main crop variety has been in commerce several years, and, as it is now in everybody's hands, there is no special interest to serve in particularly referring to it. Mr. Reading Galton, at p. 209, shows how very largely the produce of The Factor from 3½ lb. of seed exceeded even that of Northern Star, and some other popular varieties. In our National Potato Society's trial, conducted near Wimbledon this season, the produce of ninety sets of The Factor was 224 lb., Up-to-Date coming next with 217 lb., British Queen 182 lb., and Evergood 147 lb. In this trial the sets were planted as received, and no form of artificial propagation was adopted. A

growth generally was remarkable, the tops extending to a diameter of 6 feet, and were very stout and healthy. When lifted, so far as they are at present, the single plant of The Factor gave the great product of 17 lb., King Edward coming next with 15 lb. These roots were indeed a sight to see when lifted, and I longed for a camera to show in a picture what the crops really were. They would have conveyed a more complete element of truth than is commonly found in Potato pictures of crops as laid out on the ground. Warrior gave 14 lb., Evergood 13 lb., and Great Central 12 lb. It is very evident that with some varieties something is to be said in favour of planting large sets 4 feet apart, especially of such fine varieties as The Factor. A. Dean, Surrey.

Columbine (soft pink).

Darkness (very dark maroon).

Leslie Seale (mauve, with deep purple centre).

Aurora (straw colour, with red centre and back).

Snowdrop (white, with slight yellow centre).

Beauty's Eye (lilac-mauve).

Tommy (yellow, splashed with red).

Miss Roberts (canary yellow).

All the above plants are very floriferous, of medium or under medium height, and of neat growth. The flowers are of perfect form and shape, and moreover constant in respect of colour. It is, indeed, a matter of much astonishment that with such easily-grown autumn flowers of perfect form and beauty available, one finds single Dahlias so little known. How seldom are they

seen in the horticultural shows of country towns and villages! Having grown them for many years myself, my advice is—Secure in May good named varieties only, and when all danger of frost is over, plant out $3\frac{1}{2}$ feet apart in any ordinary garden soil. Choose a position open to the sun but somewhat sheltered from the winds, and then, provided firm staking and tying are properly attended to, and the old seed-heads are constantly removed during the flowering season, no disappointment will ensue. *Rev. S. Spencer Pearce, Combe Vicarage, Woodstock, Oxon.*

BULB GARDEN.

NARCISSI THAT WILL NOT FORCE.

IN a recently-published note in the *Gardeners' Chronicle* (see p. 186) on "Daffodils for Early Forcing," I mentioned that many varieties cannot be forced successfully. Not only is it impossible to force certain varieties into flower by artificial heat, but they remain absolutely uninfluenced by the greater heat. My first experience of such Daffodils was obtained many years ago, when probably not a score knew anything at all concerning the forcing of the *Narcissus* genus. Concluding somewhat naturally that all the varieties might be forced in some degree or other, we put in a good many bulbs of the common Lent Lily, *Narcissus pseudo-Narcissus*; but to our surprise we found that although the bulbs made roots, they would not produce any growth; so after some weeks they were turned outside and left exposed to the more or less uncongenial weather of the month of February. Later on our first surprise was but increased when, as though nothing had happened, these very bulbs flowered quite well at about their usual period, this notwithstanding the harsh conditions that prevailed from the time of their being turned out-of-doors. Seeing that these bulbs had for weeks been subjected to a temperature of 50° to 60° and were then suddenly turned out to encounter frost and cold, and flowered quite well in the end, is a fact worth recording if only as proof of their great powers of endurance. Not all the *Narcissi* are so hardy, however, for I recall a heavy loss nearly twenty years ago of *N. ornatus* that had been forced into bloom, and after this were put out and encountered some sharp frosts.

Equally unresponsive to artificial heat are the following varieties: *N. biflorus*, *N. poeticus* (the May-flowering form), *N. p. plenus*, and in a lesser degree *N. p. poetarum*. Upon the three first-named varieties, artificial heat, whether mild or otherwise, has not the slightest influence, and the finest bulbs, if early planted and duly prepared, will not make the least top growth, but remain absolutely below the surface of the soil. This is the more remarkable when we remember that in progressive stages artificial heat has been applied for some two months. Nor is there later on the least evidence of strangulation or that the growth of the scape has been arrested within the bulb, such as is sometimes seen in *Hyacinths* unduly forced, for the flowering is quite normal in this respect. Another phase of the subject is the retarding influence of artificial heat if too early applied to *N. poeticus poetarum* and *N. p. ornatus*. If these varieties be placed too early in heat they will frequently be much later in flowering than another batch introduced three weeks later. In these heat-retarded batches however there is the obvious proof of severe strangulation, the scape being unable to pass the orifice of the neck. For this reason in forcing *N. ornatus* a long preparatory season in a cool structure, giving abundant water meanwhile, is essential to success, and the moment the scape is seen to be clearing the neck of the bulb heat may be applied freely. Frequent failures result from affording too little moisture to the roots alone.

Another instance is seen in the trumpet section as well as in the *incomparabilis* group, illustrating how impatient to heat are some varieties, for the scape refuses to arch or droop, and the flowers open when quite erect. "*Princeps*," single *incomparabilis* varieties, and especially the common double form are instances of applying heat too early or too suddenly. In such cases however judgment and experience are the best correctives; but it would be interesting to learn what explanation the scientist would give concerning those varieties that for weeks remain uninfluenced by the ordinary methods of forcing. *E. H. Jenkins, Hampton Hill.*

attended to at once. When repotting, place large crocks in the bottom of the pot to the depth of 2 or 3 inches, and over these spread a thin layer of rough sphagnum-moss; then place in some of the lower roots, a few at a time, and work in amongst them clean-picked sphagnum-moss and broken crocks, about one-half of each, bringing the other roots well up to the surface in the same manner. Fill up to within $\frac{1}{2}$ an inch of the top, pressing the materials down firmly, and face the surface with good living sphagnum-moss. When placing the roots into the pots, use every care so as not to crack or break them unnecessarily. When the work of potting has been done, provide sufficiently strong stakes to so support the plants in an erect position that they may not be swayed



FIG. 129.—TITTENHURST: PART OF THE FLOWER-GARDEN. (SEE P. 283.)

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Vandas.—Such tall-growing epiphytal Orchids as *Vanda tricolor*, *V. suavis*, and their varieties, often lose some of their lower leaves during the hot summer months, the cause of which may be due to excessive flowering, irregular temperature, insufficient ventilation, or want of sufficient humidity in the atmosphere. In the case of such plants it is advisable to carefully pick out all the potting material, afterwards cutting off so much of the base of the stem that when the plant is lowered into the pot the bottom leaves may be on a level with the rim. I have invariably found that the further the bottom leaves are from the moist sphagnum-moss, the less vigorous do the plants become. If such disturbance at the roots is necessary, this is the best season for the work, as the plants are now commencing to root freely, and will continue to do so all through the winter months. Less foliage is likely to be lost than when the operation is done at any other time of the year. Well-rooted specimens that have insufficient rooting-space, and those that require only to be top-dressed, should be

about. Carefully peg down on to the surface any long straggling roots, and they will afterwards send roots into the moss, thus greatly assisting the plants to re-establish themselves. Large healthy specimens which have sufficient rooting-space for another year will only need to be resurfaced with living sphagnum-moss; but it sometimes happens that through repeated top-dressings the material at the top is sweet and fresh, whilst that underneath has decomposed. If the grower is at all suspicious of this, all of the compost should be carefully picked out from between the roots and replaced with fresh. After repotting the plants they will require to be kept shaded from the sun, and no water should be afforded them for several days, after which give them one good soaking. The moss on the surface will soon become dry again, when it should be lightly sprinkled over so as to keep it alive. When the plants are re-established the quantity of water may be gradually increased, but the compost must never be kept in a saturated condition, it being better to keep the surroundings moist by damping down several times each day. One of the essential requirements of these *Vandas* is a cool, moist stage for them to stand upon. The intermediate-house is the best place for them, but if no proper intermediate-house is at command, the plants may be stood together at the cooler end of the *Cattleya* division, and the balance between warmth and atmospheric

moisture should be maintained. As more warmth from the hot-water-pipes is now needed for the other occupants of the house, we cover the pipes immediately under the Vandas with a thick layer of freshly-gathered Oak and Beech-leaves, which are kept damp so as to counteract the drying effects of the pipes on the air surrounding the plants. The bottom ventilators should be kept more or less open, according to the weather outside. A little ventilation at the top of the house is beneficial whenever the temperature of the external air is above 50°.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cucumbers.—The favourable weather experienced during September and its continuance to the present time, have produced short-jointed, sturdy growth in Cucumber plants which will be of value to the plants during November and December. They will now be setting fruits freely, but only sufficient should be allowed to develop to supply necessary requirements. Cut the fruits when they attain to the desired size, and stand them stalk downwards in a little water in a cool place. During mild weather the amount of fire-heat should be carefully regulated, only allowing sufficient to keep the plants in a vigorous condition. When giving air it must be recognised that the object is not to lower the temperature, but to prevent it from becoming too high. It should be maintained at from 65° to 70° at night, with a rise of 10° by day. Remove, regulate, and stop the growths once a week, avoid overcrowding, and allow every leaf full exposure to the light. At this season, when the syringe cannot be used frequently, light fumigations will be necessary occasionally to prevent red-spider and thrips. As the roots from the plants appear on the surface of the soil, afford them moderate but frequent top-dressings. If it is considered necessary, liberal applications of weak liquid-manure may be given, but it should be of the same temperature as that of the soil in which the roots are growing. Should mildew appear, dust the leaves with flowers-of-sulphur.

Strawberries in Pots.—It is important that these should not be allowed to suffer from want of water. Weak liquid-manure given now will assist in producing strong trusses of flowers which will set well. Any small side crowns that have been allowed to remain should be removed towards the end of the present month. Plants intended for early forcing should be given the protection of frames. Plunge the pots in leaves and cover with the lights in severe weather only. Later batches of plants may be plunged in the open, and any light material may be used for their protection during severe weather.

Tomato-plants intended for fruiting in winter should be potted in a clean, well-drained soil, using no manure. Afford them abundance of air, and place them near to the glass in a dry atmosphere of moderate temperature. Watering should be carefully attended to, and the side-shoots must be pinched off. To secure a supply of fruit early in the spring, it will be necessary to propagate plants from cuttings. Side-shoots make excellent cuttings, and should be inserted singly in a light, sandy soil in 2 or 3-inch pots. Plants for this purpose may also be raised from seeds if sown at once in light soil, placing the pots containing the seeds near to the glass.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Orchards.—The best time for planting fruit-trees is close at hand, and those intending to make large orchards, should get the land in order for the reception of the young trees without delay, so that most of the planting may be finished before the frosty weather sets in. Trees that are planted early and properly, usually start into growth freely in the following spring and make considerable progress during the first season, but those which are planted in spring grow much less quickly and are liable to form flower-buds instead of wood. The roots of late-planted trees

also need more attention during dry weather in regard to providing them with water and mulchings, &c. Select and plant only the most serviceable varieties, and do not obtain a great number merely for the sake of variety. If the land is under grass, remove from 6 to 9 square feet of turf, throw out the top spit and break up the subsoil to a good depth. If the staple is poor in quality or unsuitable, cart it away, and refill the holes with fresh compost; otherwise the bottom spit may be improved by mixing with it road scrapings, burnt earth, and a little decayed manure. Provide orchard trees with plenty of space for head-room; 30 to 40 feet apart is none too much for large-spreading varieties of Apple and Pear-trees; Plum-trees need about 24 feet, and large Cherries from 30 to 40 feet; Damsons require 25 feet except when used as wind-breaks, when they should be planted not more than 15 feet apart. The wider spaces between the permanent trees may be planted with bush or half-standards trees to be removed later when the permanent trees have grown to considerable size. After the stations for the trees have been prepared, some strong stakes should be driven into the hard bottom for supporting the trees when they have been planted. Do not bury the roots deeply, and in wet soils plant the trees on mounds a little above the ground-level. Take care to cut all damaged roots with a sharp knife, and work some fine soil amongst the roots, slightly raising and shaking the trees before treading the soil firmly about them. Orchards should always be well drained, and if the land falls to the south and it is provided with shelter from the north, so much the better. Plant the trees in lines running from north to south.

Varieties to Plant.—A capital variety of Damson to plant round the orchard as wind-breaks is that known as Farleigh Prolific. A few good and reliable varieties of Apples which will succeed in most parts will be found in the following:—**Dessert varieties:** Cox's Orange Pippin, King of the Pippins, Margil, Lady Sudeley, Summer Geldings, Cox's Pomona, and Worcester Pearmain. **Kitchen varieties:** Lord Derby, Tower of Glammis, Lane's Prince Albert, Fillbasket, Round Winter Nonsuch, Warner's King, and Dumelew's Seedling (Wellington). Before planting on a large scale, however, special enquiries should be made to experienced fruit-growers in the district as to the varieties that have proved to be suitable for the locality. [See the list to be published in our next number. Ed.]

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Earthing-up Celery.—Continue the work of earthing-up Celery as growth proceeds, and when doing this for the last time do not cover up the foliage so deeply that only the tips can be seen above the soil. I prefer to leave 6 inches at the very least of healthy leaves showing above the soil when all is finished.

Fennel.—If plants have been allowed to ripen seeds, the seed should now be gathered, and if sown on a dry border will produce plants which can be transplanted to their permanent quarters in spring. Old stools soon become exhausted when allowed to run to seed, and if the present stock is no more than is required to meet the demand, it will be necessary to clear the beds of all rubbish, and apply a top-dressing of short manure to encourage any offsets there may be to make strong growths towards the spring, when the old stools can be taken up, divided, and replanted; or the offsets only may be detached and planted.

Seakale.—Remove all the foliage that is turning yellow so as to expose the crowns to as much light and air as possible. This will encourage them to finish growth quickly, and become the sooner ready for forcing. Hoe over the soil between the rows, to destroy any weeds there may be, and freshen the surface of the soil.

Rhubarb.—The leaves of Rhubarb are also decaying, and should be cleared away.

Borage.—Where plants which were obtained from the early sowings have been allowed to produce seeds, there are now sufficient plants to meet all demands which are likely to be made during the spring. These seedlings being upon hard ground withstand the winter better than those which have been raised in prepared beds. Thin out the plants if they are growing too thickly together, and make the ground tidy. If the "thinnings" are taken up with balls of soil attached to them, and are put into boxes in a sheltered situation, they can be brought forward indoors, should it appear likely that they will be required.

Mushrooms.—Collect droppings for the making of new beds to succeed those which are becoming exhausted. It is better to turn out a bed which has yielded a good crop, and replace it with a new one, than to keep it longer for the purpose of obtaining the last Mushroom it is capable of producing.

Salads.—Sow seeds as often as may be necessary to maintain the supply, and commence "blanching" at suitable intervals.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Primula sinensis.—Any plants remaining in cold frames should be removed to cool pits or houses where they can be protected from damp and frost. The earliest batch will be throwing up their flower-spikes, and may be afforded weak liquid-manure occasionally. Later plants which are intended for flowering in spring, and are now in 3-inch pots, should be transferred to others 5 inches in diameter, if they are already well rooted.

Primula stellata.—The light and graceful habit of this variety when in bloom, together with its profuse flowering, cause it to be of the greatest service for conservatory and room decoration. If the plants are afforded a favourable position and occasional applications of manure-water, they will remain a long time in perfection.

Primula obconica.—Plants throwing up their flower-spikes will require to be kept in a temperature of from 45° to 50°, and they will then continue to flower throughout the winter. The same temperature will be suitable for the other varieties named above.

Double-flowered Primulas should be afforded a good position near to the glass in a house where a temperature of from 50° to 55° is maintained at night, and having a somewhat dry atmosphere. If proper attention be given to the matter of watering, the plants will produce a succession of flowers for cutting throughout the winter.

Mignonette.—Plants required to flower in the winter, and now standing in cold frames, should be placed near to the glass in a cool pit or other structure where there is plenty of light, and from which frost is excluded. Later, in order to keep the plants growing it will be necessary to afford them a minimum temperature of from 45° to 50°.

Violets.—Those who intend to place frames over the Violets, in accordance with the advice tendered in the Calendar for April 23, should now do so. This is by far the best plan to adopt with such varieties as Princess of Wales, Luxonne, and Princess Beatrice, the stems being longer and the flowers larger beyond comparison than when the old plan of lifting the clumps is adopted. After growing the variety La France for four years, I have discarded it, as in our soil the flowers are not superior to those of Princess of Wales, while it is much weaker in constitution and less floriferous than that variety. In the absence of permanent frames, a temporary rough frame may be erected over the Violets, and spare lights laid on this. Remove the lights in the daytime during the present month, and afford all the ventilation possible in favourable weather throughout the winter. The frame should be protected when frost is anticipated. Runners may now be taken from the plants and inserted a few inches apart in boxes filled with soil, or in a shallow frame, according to the number of plants required for planting-out in April. Keep the frame closed until the cuttings have made roots.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCT. 24. { National Chrysanthemum Society's Floral Committee Meeting at Essex Hall.
TUESDAY, OCT. 25. { Croydon Chrysanthemum Society's Show (2 days).
FRIDAY, OCT. 28. { Royal Botanic Society's General Meeting.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY and TUESDAY NEXT—At Hook Hill Nursery, Woking, Two Days' Clearance Sale of 35,000 Fruit Trees, Ornamental and Forest Trees, and Nursery Stock, by order of Messrs. Jackman & Sons, by Protheroe & Morris, at 11.30.
TUESDAY NEXT—Second Annual Sale of Nursery Stock, at Bury Road Nurseries, Gosport, Hants, by order of Messrs. Legg & Son, by Protheroe & Morris, at 12.
WEDNESDAY NEXT—Palms, Azaleas, Bays, Lilliums, Spiræas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.
THURSDAY and FRIDAY NEXT—Thirtieth great Annual Sale of first-class Nursery Stock, at Mr. E. Hollauby's Nurseries, Groombridge, near Tunbridge Wells, by Protheroe & Morris, at 11.30.
FRIDAY NEXT—Imported Oncidium concolor, Established Orchids, Imported Cattleya Mendeli, and Odontoglossum Pescatorei, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—47°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, October 19 (6 P.M.): Max. 60°; Min. 54°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 20 (10 A.M.): Bar., 30.3; Temp., 55°. Weather—Dull; foggy.
PROVINCES.—Wednesday, October 19 (6 P.M.): Max. 57°. South-West of England; Min. 52°. East Coast of Scotland.

What Apples to Plant.

GROWERS throughout Great Britain and Ireland kindly furnished us with the reports as to the condition of the fruit-crops, which were published in our issue for July 30. At the same time they were good enough to answer our questions as to which were, in their opinion, the best six Apples in their district for culinary and a corresponding number for dessert purposes. We have now been able to summarise their replies, and hope in our next and in the following issue to give tables which will conclusively show which among the hundreds of Apples catalogued are the best for growing in particular districts. The importance of this information to intending planters is beyond question. Of course local circumstances and season of ripening must affect the issue more or less, but as our reports embrace the whole country, and are furnished by a large number of the most eminent and trustworthy authorities, the local circumstances to which we have alluded will not materially affect the general conclusions.

THE PRESIDENCY OF THE NATIONAL ROSE SOCIETY.—At a meeting of the Committee of this Society on Tuesday last, it was decided that there shall in future be no permanent President. It is probable that Mr. C. E. SHEA will be nominated as President for the next two years.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the Session 1904-1905 will be held on Monday, November 14, 1904, when the President, Mr. H. T. STEWARD, will deliver an opening address. The chair will be taken at 8 o'clock. At the conclusion of the address the President will unveil a portrait of Mr. JOHN WORNHAM PENFOLD, subscribed for by a large number of members, and presented in recognition of his valuable and long-continued services as Honorary Secretary of the Institution.

ADVERTISEMENTS.—We are sorry again to have to caution gardeners and others against the procedures of a certain advertiser with many names who has availed himself of our advertising columns to gain small sums of money from gardeners and others under pretence of finding them employment. In some cases the money was incautiously sent. We cannot impress upon gardeners too forcibly the necessity of exercising caution in these matters. In no case should they send money to strangers. The Yorkshire police are making enquiries as to the proceedings of this man, whose career of dishonesty will, it is to be hoped, speedily come to an end.

THE HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY'S exhibition will be held in the Central Hall of the Alexandra Palace on November 2, 3, and 4. The Secretary is Mr. GEORGE SAUNDERS, 13, Victoria Cottages, Archway Road, Highgate, N.

POISONING BY NICOTINE.—A young lady at Dover is reported to have met her death recently from accidentally taking some insecticide containing nicotine. The bottle was not labelled "Poison." Vendors should in their own interests take care that insecticides, fungicides, weed-killers, sheep-dips, vermin-killers, and other substances containing poisonous ingredients should be duly labelled "Poison," and not sold indiscriminately and without inquiry to the first comer. It is no defence to allege that the mixtures in question are not intended for human consumption. Although it is not possible to cope with every case of negligence or design, yet every reasonable precaution should be taken to avoid accident and to comply with the requirements of the law.

THE PROPOSED EXTENSION OF KEW BRIDGE MARKET.—The proposals of the Brentford Urban District Council to extend the vegetable and market garden produce-market at Kew Bridge, at a cost of £44,000, are meeting with great opposition in the locality. Opened originally in 1893, it received additions in the way of warehouses and offices in 1894, and extra stalls, stabling, and stand spaces in 1899, but in consequence of the market managers still receiving many complaints from salesmen and buyers of the congestion on market days, the difficulties of ingress and egress, and the loss and interference with business by reason of the majority of stands being uncovered, it was determined to extend the frontage to the main London Road, and to construct three covered avenues of ample dimensions. The land was secured for £9,766, and £1,500 was paid as compensation to tenants for the acquisition of their interests. A description of the scheme prepared by the District Council has already appeared in our columns. The subject of the loan came before a Local Government Board Inspector last week, when the Clerk to the Council gave some interesting figures relating to the progress of the market. £8000 was spent in 1893 on laying out the place originally, and at the end of 1894 it had produced £612, a profit of 2d. in the pound to the rates. In 1895 it realized £460; in 1896, £512; in 1897, £587 10s.; and in 1898, £710. The following year £4,300 was spent on extra stands, stables, &c., but only £353 was realized. In 1900 the

balance was £389; in 1901 it was £398; and in 1902 it was £415, and up to the 25th of March, 1903, £401 was earned. The falling off in profits during the latter years was due to the heavier repayments and interest on the accumulated loans, which last year stood at £12,700. Since the market was opened it has earned £3,992, which has all gone in reduction of the rates. It was computed that when the extensions were carried out, the weekly tolls would produce £195 16s. 4d., a total yearly income of £4,882 11s. 4d. The yearly repayments and interest on the loan of £44,000 would work out at about £2,633 13s., which with the working expenses would about equal the income. The objectors to the scheme declare that these figures would never be realised, and that the heavy loan, plus the outstanding liabilities and the price of the site, would entail a heavy burden on the rates. The proposal was to lay out a market bigger than Covent Garden, and the prices proposed to be charged for the stands and shops, £55 per annum, would be prohibitive. It was only on one day, Friday, that there was any congestion in the market, and this might be met by constructing a new road by the side of the present market, and making another entrance and exit at the rear. On the other hand it was submitted that as the western suburbs of London grew, the market would be more and more used, particularly as Covent Garden could not be extended. Many big growers would use it were it not for the difficulties caused by the lack of room, storage, and inability to get in and out of the market. It had a railway goods-yard adjoining, whence connection could be had with the whole of England, and the biggest sellers would send goods if there were better facilities for disposing of them readily.

GRASS AND FRUIT RETURNS OF GREAT BRITAIN.—According to the preliminary statement for 1904 of the Agricultural Returns of Great Britain, the total area of land under permanent grasses is 17,103,801 acres, as compared with 16,934,495 acres in 1903, or an increase of 169,306 acres, or 1.0 per cent. The area for small fruits to June, 1904, is 77,952 acres, as against 76,152 acres in 1903, an increase of 1,800 acres, or 2.4 per cent. The total area under orchards is 243,008 acres, compared with 239,483 acres last year, that being an increase of 3,525 acres, or 1.5 per cent.

PRESENTATION TO A GARDENER.—On the occasion of leaving Eskhill, Inveresk, to take charge of the gardens at Westerlea, Murrayfield, Mr. MCINNES was presented on October 1 with a handsome silver watch and gold chain by a number of his friends in Musselburgh and district. Mr. BRYCE, Newhailes, presided, while Bailie BISSETT was croupier. Mr. HALLEY, in making the presentation, referred to the many pleasant recollections Mr. MCINNES' residence among them had left, and wished him success in his new home. A handsome gold bangle was presented to Mrs. MCINNES. There was a company of about fifty present.

CAUTION TO FRUIT AND FLOWER SALESMEN.—We are informed that a man, at one time in the employ of Mr. JAMES BRADMAN, Covent Garden Market, is calling on fruit and flower merchants, shipowners, &c., and obtaining money on various false pretences. This man ceased to be in the employ of Mr. BRADMAN on Sept. 20, 1904.

"THE SYDNEY AMATEUR GARDENER."—Among the newest horticultural papers is that entitled the *Amateur Gardener*, published monthly at Pitt Street, Sydney, New South Wales. The paper contains many useful cultural hints, and appears to be well up to date. It has a portrait of a choice florist's flower on the cover and other illustrations in the text, and in all ways seems likely to be successful.



FIG. 130.—*MECONOPSIS PUNICEA*: HARDY ALPINE OR ANNUAL PLANT FROM WESTERN CHINA
 Flowers rich carmine, stamens yellow. Introduced by Mr. E. H. Wilson to the Nurseries of Messrs. James Veitch & Sons. (See p. 282.)

NEW VARIETIES OF POTATOS.

In a class at the National Potato Society's show at the Crystal Palace for the best collection of seedling Potatos not in commerce, the 1st prize was awarded to an exhibit from Mr. J. W. Boyce, Welney, Wisbech, who had a large number of tubers of three varieties. Two of these are shown in figs. 131, 132.

The "Peckover" is described as a cross between "Up-to-Date" and Beauty of Hebron. The tubers as shown vary in form so much that whilst some would be described as of kidney shape, others were round. The "Maxim," of which a crop is shown in fig. 132, is from a cross between the varieties Duke of York and International. The tubers are of kidney shape, and they are described as becoming fit for use at a very early season. We are unable to speak of the flavour of either variety.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

COLOUR IN APPLES.—"A. D." will not gam many converts to his idea that high colour is incompatible with good flavour. What about Devonshire Quarrenden, Christmas Pearmain, Fearn's Pippin, Scarlet Nonpareil, Beauty of Bath, King of Tompkin's County, all brightly-coloured fruits of excellent flavour? "A. D." classes King of the Pippins with the best-flavoured dessert Apples; but it is a variety greatly over-estimated in this respect, and I prefer fruits of the variety Lady Sudeley when in season. No one would think of giving as many marks to fruits of Lady Sudeley when shown in conjunction with Cox's Orange Pippin after the middle of September; but competing together in the latter half of August, Lady Sudeley would win hands down, being then fit for dessert. Again, Worcester Pearmain is not to be despised as a table fruit during September. We must take each one in its season, as no early Apple retains its flavour long. Respecting Peasgood's Nonsuch, this is a grand kitchen Apple for the months of September and October, and not to be despised for the dessert-table; while Mère de Ménage and Bismarck retain their firmness to the last with us, the former keeping up to Lady-day, and even until May, whilst the latter is serviceable well into the spring. J. Mayne, Bickton Gardens, Devon.

On p. 275, "A. D." condemns the Apple "Lady Sudeley," which my firm introduced in 1881. We fear that he must have tasted a stale fruit—one that had been stored too long, as from our own experience and from the many favourable opinions sent to us from all parts of Britain we rank it as first-class, and by far the most important September Apple for dessert, and a good bearer either upon the Crab as a standard, or on the "Paradise" as bushes. It does not hang in clusters, but the tree crops all over, and the original "worked" trees in our trial-grounds have been a picture ever since they began to fruit three years after being "worked." Like most early Apples, it should be eaten fresh from the tree, and is then of a very pronounced spicy flavour and very highly perfumed; but if kept it becomes mealy, and loses its characteristic flavour. Further, "A. D." (in inadvertence, no doubt) calls Jolly Beggar a coloured Apple; it is a greenish-yellow Codlin. Again, he says the highest colour is rarely associated with high flavour. It may interest your readers if I give a list of Apples that have high colour yet are of first-class flavour; while many are very fine with bronzy-red, crimson, or red on one side, that rank as first-class; and looking through our catalogue I find flavour is about equally balanced between "coloured" and russet or green-fruited kinds.

Apples of very high colour that are of first-class flavour (list No. 1, nineteen varieties):—

Adam's Pearmain, quite A1.
Baldwins, very fine in Kent.
Ben's Red, very crisp, like Quarrenden.
Calville Rouge Précoce, spicy and rich.
Fearn's Pippin, very good late Apple.
Hereford Crimson Queening, fine in October.
Lord Hindlip, very rich in February.
King of Tompkin's County, extra fine.

Lord Burghley, very rich in March.
Mrs. Phillimore, very fine November to March.
Margil, crimson and russet.
Parquet, rich scarlet, fine flavour.
Scarlet Nonpareil, A1 in February.
Wealthy, crimson, of fine flavour.
American Mother, the best October dessert fruit.
Devonshire Quarrenden, crimson.
In good seasons Cox's Pomona ranks as a good dessert fruit.
Cox's Orange Pippin is often crimson.
Baumann's Red Reinette is deep blood-red, and yet has fine flavour in February.

In the second section of partly-coloured crimson-cheeked and russet Apples, we have among the finest the following varieties—

Allen's Everlasting, very rich, March and April.
Allington Pippin, primrose-red and russet.
D'Arey Spice, dull green, April and May.
Duke of Devonshire, russet, April.
Braddick's Nonpareil, russet-bronzy.
Egremont Russet, golden-russet.
Cockle's Pippin, greenish-yellow, often covered with russet

Gardeners' Chronicle report, might have supposed the tubers to be ornamental paper-weights, except for the fact that five lines out of about 450 in the report mention a small exhibit of boiled Potatos (without saying whether they were eatable or not). There is no over-statement in these words. I was talking lately with a Lincolnshire friend who is involved in the recent Potato mania, and I asked him whether the buyers and sellers of the Eldorados, &c., took edible quality into account. He answered, "Not at all. No one could afford to boil a single tuber at the prices, and they might be made of soap for all the dealers know or care." The few moderately new varieties I have been foolish enough to grow in my own garden are coarse and inferior to a degree. Up-to-Date, no longer, of course, a novelty, is fit only for cattle, and my reflection when I look upon it is, "Is thy servant a cow that he should eat this thing?" That "famous early," Sir John Llewelyn, is of the poorest and most vapid quality, and it is to be regretted that it is associated with



FIG. 131.—NEW POTATO "PECKOVER," SHOWN AT THE CRYSTAL PALACE ON OCTOBER 11.

Claygate Pearmain, russet and green.
King's Acre Pippin, russet and bronze.
Ribston Pippin, crimson and russet.
Norman's Pippin, russet and gold.
Reinette de Canada, russet and gold.
Old Nonpareil, russet and gold.
Roundway Magnum Bonum, bronzy striped, russet and green.
St. Edmund's Russet, golden-russet.
Mabbot's Pearmain, crimson and russet.
Sturmer Pippin, bronze, russet and green.
Winter Ribston, bronzy-russet and green.
Blenheim Orange can be put in either or both lists.

Col. Vaughan, Duchess's Favourite, Worcester Pearmain, and Gascoyne's Scarlet Seedling, may be only considered culinary market fruits, but are yet esteemed by many for dessert. George Bunyard.

THE NATIONAL POTATO SOCIETY.—That we are still pre-eminently a nation of shopkeepers is evidenced by the late show, and by the reports of the show of this Society. The ignorant might have supposed that the public and the National Potato Society regarded the Potato as a thing intended primarily to eat. But no; it is evidently, like the Jew's razors, made to sell, and for no other reason. I have perused several long reports of the show with great care, and in none of them, so far as I can discover, does the word "flavour" occur. A visitor from another planet inspecting the Potatos at the show, and reading, say, the

so good a name. "Evergood" has never been good enough to eat, and Northern Star, in my opinion, is tasteless, not disease-resisting, and most troublesome to grow, because of its habit of super-tuberation. I have no reason to anticipate (nor, indeed, do the vendors trouble themselves to assert) that the newer and priceless varieties are any better. The fact is that this Potato excitement is little but a monetary speculation, with as little reference to its actual material as a Stock Exchange gamble has to actual scrip or investment. Moreover, it seems to afflict its devotees with a singular aberration of vision, taste, and even of common reasoning power. It will be noticed that yellow Potatos are discarded, or humbly apologised for, and whiteness extolled as a supreme virtue. In point of fact, the very highest Potato flavour is found in the yellow Ash-leaf varieties; and others are well flavoured in proportion as they are yellow-fleshed, and the whiter they are the less they taste like a Potato or anything at all. The French, when I used to be a good deal in France, were sensible enough to eat none but yellow Potatos, and for nearly twenty years I have grown a yellow kidney, obtained from Messrs. Vilmorin-Andrieux et Cie, which is as early as Ashleaf and keeps far into the winter. In flavour, compared with it, the new cattle-tubers are as water unto wine. As to the dwindling of the reasoning faculties under the

influence of the Potato craze, every newspaper every day says Mr. So-and-so has just sold three-sixteenths of an ounce of his new Potato What-you-call-it for 50 guineas, which works out at £42,000,000 (or what you like) per acre. One might have supposed that the gardener's boy would know that a novelty is no longer a novelty or saleable at novelty-price when there is an acre of it. But seriously, should not one of the objects of the National Potato Society be the production of edible Potatoes? *G. H. Engleheart, V.M.H.* [We sympathise with our correspondent's

On October 6 I took up from the 2 lb or nine tubers planted, a crop of 269½ lb. of sound tubers and 7½ lb. of diseased ones, making a total of 277 lb. from the nine tubers planted. *A. F. Grubb, Seaforde Gardens, Co. Down.*

CARBONIC ACID STARVATION.—Will you kindly allow me to correct a rather important misapprehension which may arise from a statement attributed to me in your brief report of my recent lecture at the Chelsea Physic Garden? The amount of carbon dioxide in the atmosphere



FIG. 132.—NEW POTATO "MAXIM," SHOWN AT THE CRYSTAL PALACE ON OCTOBER 11. (SEE P. 290.)

remarks, but must point out that neither the judges nor the reporters have any chance of tasting the exhibits except (as regards a few tubers only) in the class for cooked tubers! *Ed.*

[**POTATO "NORTHERN STAR."**—In respect to the paragraph on p. 270, stating that a crop of 722½ lb. had been obtained from 7 lb. of seed tubers, I may say that last spring I obtained 2 lb. of seed, consisting of nine tubers, from Messrs. A. Dickson & Son at 4s. the lb. I cut them all to single eyes, and started them in 6-inch pots in a cold frame, and when quite safe from frost in spring, I planted them out in the heaviest part of the garden here, as my best plots were all otherwise occupied at the time. I allowed them 2 ft. 6 in. between the drills and 2 ft. between each set.

is 3 parts in 10,000. I pointed out that in a plant house with insufficient communication with the external air the plants cultivated in it might suffer from carbonic acid starvation. And I described a case in which I believed this had actually occurred at Kew. *W. T. Thiselton-Dyer.*

PLANT PORTRAITS.

GURANIA ERIANTHA, Cogniaux, *Revue Horticole*, August 16. A Peruvian Cucurbit, with palmately-lobed downy leaves and stalked heads of flowers, the petals linear, red, and covered with long white hairs—a highly ornamental stove climber.

APPLE ISIDORE DUPONT, belonging to the Calville section, but with a very rich scarlet coloration on the sunny side, ripening in September. Silver Medal, Paris.—*Revue Horticole*, September 1.

SOCIETIES.

THE ROYAL HORTICULTURAL.

OCTOBER 18.—The Royal Horticultural Hall in Vincent Square was almost as full of exhibits on the occasion of the ordinary meeting on Tuesday last as it was a fortnight previously, when the Fruit Show was held there; and the display was not merely a large one, but exceedingly interesting, including novelties in such distinct subjects as Nepenthes and fruits, and Nerines and Potatoes. The lightness of the Hall and its suitability for its purpose are the subject of general remark. A more rigid exclusion of commonplace exhibits, and a more tasteful arrangement of the exhibits are still to be desired. Mr. ELWES' cross-bred Nerines, Messrs. SANDER's ornamental-leaved Begonias, Messrs. R. VEITCH & SON's new Nerine from South Africa, Messrs. JAS. VEITCH & SON's Nepenthes, and a new variety of Plum from the same firm were all of great interest, whilst large collections of Chrysanthemums from Mr. H. J. JONES, Messrs. W. WELLS & Co., Mr. W. J. GODFREY, Mr. NORMAN DAVIS, and others, reminded us that the Chrysanthemum season is now commencing in real earnest.

In addition to recommending one First-class Certificate and ten Awards of Merit to plants which are described below, a deputation from the Floral Committee recommended ten Awards of Merit to new varieties of Chrysanthemums.

The FRUIT AND VEGETABLE COMMITTEE recommended an award to the new Plum we have mentioned, and a Gold Medal for an extraordinary exhibit of Apples and Pears from British Columbia.

The ORCHID COMMITTEE recommended awards including two First-Class Certificates, three Botanical Certificates, and five Awards of Merit, and had a fine display of exhibits for inspection.

In the afternoon seventy-six new Fellows were elected, and Professor HENSLOW delivered a lecture upon "Geographical Botany, as the result of Adaptation in Plants," which was illustrated by lantern-slides. The attendance throughout the day was good.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. H. B. May, Jas. Walker, W. P. Thomson, E. H. Jenkins, Jas. Hudson, Jno. Jennings, Jno. Green, G. Reuthe, J. A. Nix, R. C. Noteutt, R. Hooper Pearson, Geo. Nicholson, Chas. Jeffries, Chas. Dixon, R. W. Wallace, H. J. Cutbush, W. Cuthbertson, Geo. Gordon, C. E. Pearson, M. J. James, Geo. Paul, C. E. Shea, Chas. Blik, C. J. Salter, W. Howe, and J. F. McLeod.

The Hon. WALTER ROTHSCHILD, Tring Park, Tring, exhibited his new *Gloriosa Rothschildiana* (see fig. 125, in *Gardeners' Chronicle*, May 23, 1903) as a plant growing in a pot. The segment of the flowers were red edged with yellow, but they become crimson all over after they have expanded.

Messrs. W. CUTBUSH & SONS, Highgate, Middlesex, exhibited a white-flowered perennial Aster growing not more than a foot high from the ground. It was named "White Bedder."

Violet "Baronne de Rothschild" is a very pretty purple-coloured, large-flowered Violet shown by Messrs. ROBERT VEITCH & SON, Exeter, who described it as flowering earlier than any other variety.

Mr. CHAS. TYLER, Carrickmines, Co. Dublin, exhibited flowers of a very bright scarlet-coloured variety of *Souvenir de la Malmaison* Carnation. We believe this variety possesses considerable merit, though apparently the calyces are apt to split.

From H. J. ELWES, Esq., Coleshourne, Andoversford (gr., Mr. W. Walters), came a most interesting collection of Nerines, all of which were seedlings raised from crosses effected at Coleshourne. The variation that has been produced by cross-breeding is remarkable, and many shades of colour are observable in the flowers; some are pure scarlet, and others almost pure white. Two of the best of those exhibited are described under "Awards." A nice plant of *Stapelia gigantea*, bearing a perfect specimen of the curious flower of this species (figured in *Gardeners' Chronicle*, December 22, 1888, p. 729), was also shown by Mr. ELWES (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a magnificent collection of Nepenthes, and for this group and other exhibits from the same firm a Gold Medal was awarded.

The *Nepenthes* included twenty-eight distinct species, hybrids and varieties, including a new one described under "Awards." Most of the plants bore excellent specimens of the different pitchers characteristic of each, and very rich colour was supplied by such sorts as *N. x Nita*, *N. x Mastersiana*, *N. sanguinea*, *N. x rubella*, *N. x Tiveyi*, *N. Sir W. T. Thiselton-Dyer*, &c. Other sorts were *N. x Balfouriana*, *N. Rafflesiana*, *N. formosa*, *N. Burkei excellens*, *N. x cylindrica*, *N. x rufescens*, &c. The group testified to the excellent cultivation the Chelsea firm continues to afford this interesting class of plants. Messrs. JAS. VEITCH & SONS, Ltd., also brought their winter-flowering *Begonia* "Mrs. Heal," a large batch of *Leonotis leonurus*, and a number of named varieties of *Bouvardias*.

Messrs. CANNELL & SONS, Swanley, Kent, staged vases of zonal *Pelargonium* flowers, and several stands of *Chrysanthemums*, principally of the small decorative type—*Etoile Blanche* (excellent for market purposes), *Jason* (free-flowering yellow variety), *La Danube*, Mrs. W. Hubert, &c. Mrs. J. C. Judge is a new reflexed Japanese flower, of rosy-purple colour with lighter reverse. The *Pelargoniums* were shown in the usual first-class style by this firm (Silver Banksian Medal).

Messrs. BULL & SONS, Chelsea, set up a small collection of ornamental foliage stove and greenhouse plants—*Codiaeums* (Crotons), *Dracenas*, *Ficus Parcelsi*, &c. An edging of pot plants of *Selaginella* in several species gave a pleasing finish.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, set up an excellent collection of well-grown plants of *Codiaeums* (Crotons) in 108 distinct varieties, thus exhibiting nearly all the types of this favourite stove plant. The plants generally were of a useful size, adaptable for decorative purposes. The colours in the individual plants were strikingly developed (Silver-gilt Flora Medal).

Lady TATE, Park House, Streatham Common (gr., Mr. W. Howe), set up a semi-circular group of ornamental stove plants, with a number of large-flowering *Chrysanthemums* interspersed to give colour. Large specimen plants of *Codiaeums* (Crotons) were arranged at the background, and *Cordylines*, *Dracenas*, *Alocasias*, *Asparagus plumosus*, *Maranta officinalis variegata*, &c., comprised the main features. Plants of *Callicarpa purpurea*, with their pleasing berries, occupied the centre of the exhibit (Silver Banksian Medal).

Messrs. JNO. JEFFERIES & SONS, Royal Nurseries, Cirencester, exhibited a number of ornamental Conifers, including many of the variegated and glaucous types. Several vases of coloured foliage were introduced in the group (Silver Banksian Medal).

Messrs. JOHN WATERER & SONS, Ltd., Bagshot, Surrey, set up an extensive collection of hardy ornamental shrubs—Conifers, Hollies, Azaleas (with excellently-coloured foliage), *Skimmia Fortunei* and *S. japonica* (both well covered with their red berries), *Acers*, *Arbutus Unedo* (in flower), *Andromeda japonica*, &c. (Bronze Flora Medal).

Mr. L. R. RUSSELL, Richmond, had a large exhibit of "berried" Evergreens. The plants were in pots, and were dwarf in size and adaptable for decorative purposes in window-boxes, the conservatory, &c. *Skimmia fragrans*, *S. japonica*, *Aucuba vera*, *Cotoneasters* in variety, *Pernettya mucronata*, &c. The whole was edged with plants of *Veronica Hendersoni*, and was very bright in appearance.

Messrs. HUGH LOW & CO., Enfield, staged Carnations Enchantress, Queen Louise, Mrs. T. W. Lawson, &c.; also pot plants of *Medeola asparagoides* var. *myrtifolia*, a smaller-leaved variety than the type.

Messrs. W. CUTBUSH & SON, Highgate, London, N., brought a number of pot plants of winter-flowering Carnations, The President, Judge Hursdale, Nelson Fisher, Mrs. Arthur Walkington, &c. Adjoining the Carnations was an extensive group of hardy flowers; Asters were good. The display was excellently staged and very bright in appearance (Silver Flora Medal).

Mr. B. LADHAMS, Shirley Nurseries, Southampton, brought a number of hybrids of *Lobelia syphilitica*, of which the variety *cerulea grandiflora* is an appreciable addition to our border plants. Mr. LADHAMS also exhibited his perpetual-flowering Pinks.

Messrs. THOS. WARE, Ltd., Feltham, Middlesex, set up flowers of many excellent hardy plants, Asters, *Violas*, *Anemone japonica*, *Physalis*, *Lupinus polyphyllus*, &c.

Mr. AMOS PERRY, Winchmore Hill, London, N., staged many pleasing hardy plants, perennial Asters, a basket of *Senecio pulcher*, a number of pot plants of *Saxifraga Fortunei*, &c.

Several comprehensive exhibits of autumn-tinted foliage and berries were displayed. Messrs. J. CHEAL

& SONS, Crawley, staged a collection of sprays of foliage tinted with most lovely autumn colours, Medlars, Oaks, Maples, *Pyrus* and *Prunus* species, &c., also several ornamental Crabs.

Captain HOLFORD, Tetbury, Wiltshire (gr., Mr. Chapman), set up a most complete collection of foliage, berries, ornamental Crabs, &c. (Silver Flora Medal).

Messrs. PAUL & SON, Cheshunt, displayed an excellent exhibit of Roses in baskets, pots, *epergnes*, and vases. The blooms were very meritorious, and demonstrated how favourable the season has been for these popular flowers. Frau Karl Druschki was noteworthy, proving the value of this variety for later as well as for early blooming (Silver Banksian Medal).

Messrs. FRANK CANT & CO., Colchester, also staged a collection of Roses, which, considering the lateness of the season, were in grand condition (Silver Flora Medal).

Mr. PRINCE, The Oxford Nurseries, Longworth, staged a number of Roses, pleasingly arranged in vases, *epergnes*, &c. Pink Maman Cochet and White Maman Cochet were shown in first-class condition. Frau Karl Druschki was also good (Silver Flora Medal).

CHRYSANTHEMUMS.

Messrs. W. WELLS & CO., Ltd., Earlswood, Redhill, Surrey, furnished one of the corners of the Hall with a large bank of *Chrysanthemums*, staging large specimen blooms over a groundwork of those of the smaller-flowering types. Mrs. F. F. Thompson is a large creamy-white Japanese variety, with rather loosely arranged petals. Miss Elsie Fulton was shown well; two large *epergnes* in the background were filled with good flowers of the variety Merstham Yellow (Gold Medal).

Mr. H. J. JONES, Ryecroft Nursery, Lewisham, contributed *Chrysanthemums*, staging them in his usual effective style. Handsome vases were filled with such varieties as *Souvenir de Mr. Buron*, *Elsie Fulton*, Mr. R. C. Pulling, Mrs. J. Dunn, *Renne*, &c., in exhibition quality. Several vases contained well-grown flowers of many excellent varieties of the smaller-flowering section (Silver-gilt Banksian Medal).

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson), staged a large bank of *Chrysanthemums*. The plants were arranged well, sloping from a higher background towards the front, which was principally occupied by three large tubs containing the variety *Horace Martin*. This pleasing yellow variety was flowering profusely, and the plants exhibited great skill in arrangement and general effect. Blooms of *Soleil d'Octobre* occupied the background, a band of plants of Vice-President Hardy separating the two yellow kinds. Bunches of ornamental foliage arranged along the front of the group gave a pleasing finish to the exhibit (Silver-gilt Flora Medal).

From Mr. ROTHSCHILD'S Gardens at Gunnersbury Park (gr., Mr. Reynolds) came an excellent batch of *Amsonia pumila*, the yellow flowers with red calyces being produced in the axils of brightly-coloured bracts of the same colour as the calyx.

Mr. W. J. GODFREY, Exmouth, Devon, staged numerous well-grown specimen *Chrysanthemum* flowers. An *epergne* containing well-developed blooms of Miss Elsie Fulton was conspicuous; Miss Olive Miller was also in grand condition. Godfrey's Masterpiece, Britannia, The Lion, Mrs. J. P. Lyce (creamy-white, excellent form, incurved), and Mrs. Geo. Mileham all deserve to be mentioned (Silver Banksian Medal).

Mr. NORMAN DAVIS, Framfield, Sussex, displayed choice blooms of *Chrysanthemums* to good advantage, presenting a pleasing exhibit with the addition of ornamental foliage plants. The varieties *Henry II.*, Mrs. C. Beckett, *Madame Paoli Radaelli*, *Sapho*, *Lady Curzon*, *Roi d'Italie*, *Beauty of Leigh* (contained in two large *epergnes*), &c., are but a selection from this fine display (Silver-gilt Flora Medal).

Messrs. DOBBIE & CO., Rothesay, staged a group of early-flowering *Chrysanthemum* flowers in many of the better varieties suitable for cutting and marketing purposes—General Hawkes, Market White, Ambrose Thomas, Goacher's Crimson, &c.

Messrs. GUNN & SONS, Market Hall, Birmingham, presented a collection of hardy *Chrysanthemums* cut from the open ground.

AWARDS.

Aconitum Wilsoni.—A plant of this new species from China was shown in a pot, and it illustrated the habit it has of producing secondary spikes of flowers from the leaf-axils on the main growths. Four or five of the leading growths bore almost fully-developed seeds, and a foot below these there was quite a show

of freshly-opened flowers (see *Gardeners' Chronicle*, October 1, p. 241). Shown by Messrs. JAS. VEITCH & SONS, Ltd. The species is allied to *A. Fischeri* (Award of Merit).

Begonias "Fearnley Sanders" and "Mrs. H. G. Moon."—These two varieties have been obtained from crossing *B. socotrana* with varieties of *B. Rex*, as were the handsome foliage *Begonias* illustrated in the *Gardeners' Chronicle*, November 28, 1903, pp. 368, 369. The former variety, "Fearnley Sanders," has large, bronzy-brown-coloured, hairy leaves, with a green band some distance from the margin, the band being thickly covered with white and red spots. In "Mrs. H. G. Moon" the leaves are bronze-coloured, and the band is a curious mixture of red and white. Both varieties are very attractive, and each was recommended an Award of Merit. Shown by Messrs. F. SANDER & CO., St. Albans.

Helianthus x sparsifolius.—Flowers of this plant were exhibited before a meeting of the Floral Committee a month ago, and the variety appeared then to be a glorified form of "Miss Mellish." Information has since been received from the raiser of the plant in America that he obtained the hybrid from crossing *H. multiflorus* with the annual species *H. californicus*. The name "sparsifolius" was given owing to the stems developing few leaves for a considerable distance below the flowers. As far as could be judged from the flowers shown on the previous occasion, they are rather larger in size and perhaps richer in colour than those of "Miss Mellish." From Messrs. H. CANNELL & SONS (Award of Merit).

Nepenthes x F. W. Moore.—This is a hybrid *Nepenthes*, exhibited by Messrs. JAS. VEITCH & SONS in their group of these plants. It is described as being from the same cross that yielded the very handsome hybrid *Sir W. T. Thiselton-Dyer*, namely *N. mixta x N. Dicksoniana*, but it is not so effective as that fine hybrid. The pitchers of "F. W. Moore" as shown were rather short, of somewhat globular form, and green in colour. The rim is moderately broad, has a wavy outline, and is deep reddish-brown in colour. The variety will probably be shown better on a future occasion (First-class Certificate).

Nerine excellens major turdiflora (see *Gardeners' Chronicle*, February 13, 1904, p. 105).—This is a very handsome *Nerine* introduced from S. Africa. The flowers are more than usually spreading, and in colour are reddish-pink. The petals recurve at the tips, and are more than 2 inches long, the flowers being 4½ inches across. The stamens are rather longer than the petals, and possess the same colour. Shown by Messrs. ROBERT VEITCH & SON (Award of Merit).

Nerine "Lady Folke."—A very attractive variety, having pale-coloured flowers of much substance, and possessing a white centre. From H. J. ELWES, Esq. (Award of Merit).

Nerine "Miss Shelley."—Another very desirable variety, of flesh-pink colour. From H. J. ELWES, Esq. (Award of Merit).

Sternbergia lutea major.—This is a very fine form of the well-known *S. lutea* (Award of Merit).

Coriaria terminalis.—This species was described by Mr. W. B. Hemsley in *Icones Plantarum*, t. 2220. It appears to have been first collected by Sir Joseph Hooker in Sikkim, but has been received since from West Szechuan, in China. It is a herbaceous plant, 2 to 3 feet high, has ovate leaves, and grows well on the rocky at Kew. The flowers are yellow, but are less ornamental than the pale yellow-coloured fruits, which are very handsome. It is distinct from all other *Coriarias* in having terminal racemes of flowers. See illustration of this species and Mr. Bean's descriptive note upon *Coriarias* in the *Gardeners' Chronicle* for October 24, 1904, p. 282. Shown by Messrs. R. VEITCH & SON, Exeter (Award of Merit).

Rhus coccinoides.—This is a species from Alabama, with entire, oval-shaped leaves that assume an effective red colour in autumn. The leaves, including petiole, are 4 inches long and 1½ inch wide. Shown by Messrs. R. VEITCH & SON (Award of Merit).

CHRYSANTHEMUMS.

Awards of Merit were made to the following:—

C. Mrs. W. Knox (Japanese).—A large and massive variety, with long, reflexing, yellow florets of a pleasing soft yellow shade; a fine full, shapely flower, promising well as an exhibition variety.

C. Mrs. D. Willis James (Japanese).—Bronzy orange-crimson with golden reverse; a large, deep, full flower of very fine quality.

C. E. J. Brooks (Japanese).—Bright magenta-crimson with deep silvery reverse; in the way of *Bride of Madford*, but much superior to it; the florets incurving, large, full, and striking.

C. Perle Rose (Decorative).—Pale rosy-mauve colour flushed with white with darker tint in the centre; a dwarf, free-flowering variety, the petals broad, and the centre full; pleasing in colour.

C. Goacher's Pink (Decorative).—A soft and pleasing shade of lavender-pink, good florets and substance, dwarf, and very free-blooming.

C. Jenny (Decorative).—Very dwarf in growth, not exceeding 18 inches, and bearing a profusion of small, compact, well-formed flowers; invaluable for pot-culture for house decoration and market.

The foregoing six varieties were from Messrs. W. WELLS & CO., Earlswood Nurseries, Surrey.

C. Mrs. C. Beckett (Japanese).—A large, full, ivory-white variety, with broad, massive florets, and having a yellow centre, the reflexed florets drooping gracefully; an extra fine exhibition variety. From Mr. NORMAN DAVIS, Framfield, Sussex.

C. Edith Smith (Japanese).—White, with a slight tinge of pink towards the points of the basal petals, pale-yellow centre, and broad drooping florets. From Mr. H. J. JONES, Ryecroft Nursery, Lewisham.

C. Miss Dorothy Oliver (Japanese).—A fairly dwarf grower, a plant in a pot being shown with three blooms; a large deep flower having broad white florets tinted with the most delicate pink colour; extra fine. From Mr. GEO. MILEHAM, Emlyn House Gardens, Leatherhead.

C. Perle Rose (Decorative).—Pale rosy-mauve colour, with a slight pale edging to each floret; dwarf and very free. From Messrs. H. CANNELL & SONS, Swanley Junction.

Orchid Committee.

Present: Henry Little, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, R. Brooman-White, F. Wellesley, W. A. Bilney, J. W. Potter, H. M. Pollett, H. Ballantine, F. W. Ashton, W. Boxall, H. A. Tracy, J. W. Odell, A. A. McBean, G. F. Moore, W. H. White, J. Charlesworth, J. Douglas, W. Cobb, W. Bolton, F. Sander, and W. H. Young.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, were awarded a Gold Medal for a very extensive and beautiful group, rich in showy hybrids, which were displayed in sections, each class being, where possible, grouped together. One group consisted of different forms of the favourite *Cattleya* × *Iris*, whose flowers ranged from primrose-yellow to reddish-gold, the labellums being purple to dark crimson. The group of *Laelia Digbyana* hybrids were represented by various crosses, the most beautiful being the new white variety "*Queen Alexandra*," which received a First-class Certificate. The centre was formed by a batch of *Cattleya* × *Mantini* nobilior, and varieties; and others noted were fine forms of *Laelio-Cattleya* × *luminosa*, and other *Laelio-Cattleyas*; *Cattleya* × *Germania*, *C. fulvescens*, *C. Parthenia vernalis*, and good *Vanda cerulea*. A pretty novelty was *Laelio-Cattleya* × *Aleyone* (*L. flava* × *C. Schilleriana*), with chrome-yellow flowers and crimson-marked lip; and a batch of the showy orange-and-crimson *L.-C.* × *Cappei* was effective.

Messrs. SANDER & SONS, St. Albans, secured a Silver Flora Medal for a very showy and choice group, for the best of which see "Awards." Among other fine novelties in the group were *Cypripedium* (*Selem-pedium*) *Gottianum* (caudatum × *macrochilum*), with elegant cream-white flowers tinted with rose; *Cattleya* × *amabilis* (labiata × *Warszewiczii*), with broad and richly-coloured lip; *Cymbidium* × *Woodlandense* (*Tracyanum* × *Mastersianum*), with pretty flowers showing much of *C. Tracyanum*; and *C. Boadicea* (*Calypso* × *nitens*, Sander's variety), with large white dorsal sepal with rose flush and broad purple central band. Several other new *Cypripediums* were shown, *Laelio-Cattleya* × *luminosa*, and other hybrids, *Zygoc-lax* × *Ameianns*, *Miltonia* *Bluntii* *Lubbersiana*, *Bulbophyllum recurvum*, *Cattleya* × *Lord Rothschild*, &c.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for a very fine group of *Cattleyas*, *Laelio-Cattleyas* and other hybrids, especially beautiful being the hybrids of *Laelia Digbyana*, the best of which was *Laelio-Cattleya* × *Digbyano-Warszewiczii* Veitch's variety, which appeared to be as much in advance of others of its section as did the phenomenal *Laelia* × *Digbyano-purpurata* Edward VII., previously raised by

Messrs. Veitch. The finely-shaped flower is of a warm purplish-rose, the disc of the lip pale-yellow, and its border deeply fringed.

Messrs. JAS. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for an effective group, the centre of which was composed of a number of the beautiful *Dendrobium Phalenopsis* *Schroederianum*, varying much in the tint of their white and rose flowers. Of the *Cypripediums* the finest were *C. Minos* of the original type, a very attractive flower; *C. Mrs. A. W. Sutton*, white dotted with purple; two fine *C. Mandia*, with white and emerald-green flowers; *C. Pitcherianum*, *C. insigne* Sander, *C. i. Dorothy*, and other forms of *C. insigne*. Also a very remarkable hybrid between *C. Mastersianum* and *C. Curtisii*. Other things noted were good forms of *Cattleya labiata*, *Oncidium Jonesianum*, and other *Oncidiums*, *Platylis* *Cobbiana*, and various *Masdevallias*, &c.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury Park (gr., Mr. G. Reynolds), was awarded a Silver Banksian Medal for a very handsome group of about sixty fine specimens of excellent forms of *Cattleya labiata*, all well grown and flowered. Two were exceptionally distinct, the one having bluish-white flowers with a slight tracing of purple in the lip, and the other a fine dark form with ruby-coloured lip.

The Hon. WALTER ROTHSCHILD, Tring Park (gr., Mr. A. Dye), was awarded a Silver Banksian Medal for a most interesting collection, composed principally of *Masdevallias* and *Restrepias*. Among the rarest of the former were the curious *M. ventricularia longicaudata*, with singularly inflated tube, and extended tails to the perianth. The true purple, yellow-tipped *M. melanexantha*, *M. muscosa*, *M. nidifica*, *M. Wendlandiana*, and many other species and several pretty hybrids. Of hybrids were the showy *Laelio-Cattleya* × *Digbyano-Warszewiczii*, and *Cattleya* × *Minerva*, *Cattleya labiata*, some *Phalenopsis Lowii*, and others were also included.

Messrs. STANLEY & CO., Southgate, secured a Silver Banksian Medal for a good group of their very fine strain of *Cattleya labiata*, together with a few hybrids, the most striking of which was *Cattleya* × *St. Gilles* (*Patrocinii* × *aurea*). Flowers rose coloured with a few purple spots on the tips of the petals, the well-displayed lip being yellow in the centre.

Messrs. HUGH LOW & CO., Enfield, received a Silver Banksian Medal for a group composed of *Oncidium incurvum album*, *Cattleya* × *Mantini*, *C. labiata* vars., *C. Bowringiana* Low's variety, fine in shape and bright in colour; *Phalenopsis denticulata*, *Warszewiczella Wallesiana*, *Oncidium cheirolepium*, a fine specimen of *Masdevallia Tovarensis*, *M. Pourbaixii*, *Laelia pumila*, &c.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegge), was awarded a Silver Banksian Medal for a good group, in the centre of which were a fine lot of *Cattleya* × *Mantini* varieties; with them were good *Cattleya labiata*, including the dark-coloured *C. i. Brilliant* and the white *C. i. Lowii*, the latter having a pale violet blotch on the lip. Others remarked were *Cattleya* × *Mrs. J. W. Whiteley*, *Laelio-Cattleya* × *Ascania*, *L.-C.* × *Ingrami*, *Lycaste Skinneri* Fairy, and alba, *Cymbidium giganteum*, *Miltonia* × *Bleuana* (with twenty-three flowers), and *Oncidium* × *Mantini* Bradshaw's (with fine yellow lip with some brown markings).

M. CHAS. VUYLSTEKE, Ghent, sent varieties of *Odontoglossum* × *ardentissimum*, *O. Wilkeanum*, *O. Harryano-crispum*, and *O. Vuylstekei*.

C. J. LUCAS, Esq., Warnham Court (gr., Mr. Duncan), sent *Cypripedium* × *Chameleon* (*nitens superbum* × *Williamsianum*).

The ST. GEORGE'S NURSERY CO., Hanwell, showed a large-flowered *Vanda cerulea*.

Mr. H. A. TRACY, Twickenham, sent a number of finely-flowered *Cypripedium Spicerianum* raised from seed, and an *Eria* species.

C. C. MANX, Esq., Levanne, Gourack, Glasgow, sent *Cypripedium* × *Levanni* of unknown parentage.

Awards.

FIRST-CLASS CERTIFICATES.

Cypripedium × *Fred. K. Sander* (Annie Measures × *bellatulum*), from Messrs. SANDER & SONS, St. Albans.—A handsome giant among the much-prized *C. bellatulum* hybrids, and fine at all points. The large, wax-like flower is creamy-white evenly spotted with dark purple, the spotting on the labellum being smaller than on the petals. Flower over 4½ inches across, each petal 3½ inches long and 1½ inch wide. Dorsal sepal 2½ inches wide.

Laelio-Cattleya × *Digbyano-Mossie*, *Queen Alexandra* (Mossie Wageneri × *L. Digbyana*), from Messrs. CHARLESWORTH, Bradford.—The first to appear without a trace of pink. The fine flower is white, with a very slight greenish tinge on the sepals; lip white, with a trace of primrose in the centre.

AWARDS OF MERIT.

Cypripedium × *King Edward VII.* (Rothschildianum × *nitens magnificum*), from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—A noble hybrid, with well-marked features, distinguishing it from the other hybrids of Rothschildianum, and especially in the firm texture and fine shape of the flower. Sepals and petals pale greenish-white, with dark chocolate-purple lines on the dorsal sepal, and blotched lines of the same colour on the extended and broad petals. A feature in the flower is the large size of the lower sepals, which gives importance to the flower. Both upper and lower sepals have some white on the margin.

Cypripedium callosum Sander, "*Hye's variety*," from Messrs. SANDER, St. Albans.—A much nearer approach to an albino than the old form. Dorsal sepal and petals white, with fine emerald-green lines on the lower part. Lip primrose-yellow tinged with green.

Cattleya × *Rosa Lecnan* (amethystoglossa × *aurea*), from Messrs. CHARLESWORTH.—A beautiful and very distinct hybrid. Sepals and petals pale Indian-yellow, the sepals having some purple spots and the petals a slight purple veining. Front-lobe and erected side-lobes of the lip glowing violet-crimson.

Cattleya × *Iris* var. *Fuscinator*, from Messrs. CHARLESWORTH. This forms one extreme of variation in this beautiful hybrid, the tint being almost wholly of old-gold colour slightly shaded with red, and of that bright hue sometimes seen on autumn-tinted foliage.

Cattleya Portia "*Chardwar variety*" (labiata × *Bowringiana*), from G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water. Flowers large, and of fine form; rose-purple with dark-claret eye.

BOTANICAL CERTIFICATES.

Restrepia aspicensium, from the Hon. WALTER ROTHSCHILD, M.P. A pretty dwarf variety with small yellow flowers spotted with chocolate, the concave arrangement of the lower segments being peculiar.

Orlia macrostachya, from the Hon. WALTER ROTHSCHILD. An old attractive species with ascending spike of white and pink flowers.

Bulbophyllum Weddellii, from F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin.—A most remarkable species with a nodding raceme of about twenty-six flowers each an inch in length. The narrow sepals and petals are greenish, the singular, delicately poised labellum purple-and-white.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman); and Messrs. Jos. Cheal, Jas. Gibson, J. McIndoe, S. Mortimer, A. Dean, W. Pope, H. Parr, P. C. M. Veitch, Geo. Kelf, W. Bates, J. Lyne, J. Jaques, O. Thomas, G. Reynolds, F. Q. Lane, J. Willard, Geo. Woodward, J. H. Veitch, Geo. Wythes, W. Poupard, A. H. Pearson, and Rev. W. Wilks.

A collection of Apples exhibited by the AGENT-GENERAL FOR BRITISH COLUMBIA, Salisbury House, Finsbury Circus, London, E.C., showed what excellent fruit is being exported from the colony of British Columbia. Several of the varieties shown are known to our own growers, as *Wealthy*, *Blue Pearmain*, *Golden Reinette*, *Warner's King*, *Gravenstein*, *Ribston Pippin*, *Northern Spy*, *King of Tompkin's County*, *Blenheim Orange*, and *Emperor Alexander*. In all cases the fruits were rather better coloured and had smoother skins than average specimens cultivated in this country. A red Apple named *Wolfe River* was larger than our *Peasgood's Nonsuch*, but apparently soft in texture, although it was awarded a Cultural Commendation. The exhibit had been packed five weeks, and had travelled 3,000 miles by train and 3,000 miles by boat. Some very nice samples of *Beurré Diel* and *Beurre d'Anjou* Pears were also shown (Gold Medal).

J. A. NIX, Esq., Tilgate, Crawley (gr., Mr. Neal), staged 112 dishes of Apples and Pears. The individual fruits were not of great size, but were excellently finished, and considering they were gathered from standard trees carrying large crops they were meritorious. Among Apples, *Hereford Beaufin*, *Cornish Giltflower*, *Dutch Mignon*, *Worcester Pearmain*, *James Grieve*, *The*

Queen, and Lord Derby were prominent; while good examples of Pears were shown in the varieties Beurré Alexander Lucas, Pitnaston Duchess, Doyenné du Comice, and Duchesse d'Angoulême (Silver-gilt Knightian Medal).

Mr. GEO. WOODWARD, Barham Court Estate Gardens, Maidstone, set up numerous dishes of Apples and Pears. The quality of all the fruit exhibited was first-class, colour, size, and finish being excellent. To do this exhibit justice we should have to enumerate all the varieties shown, but we may mention James Grieve, Mère de Ménage, Gaseoyne's Scarlet Seedling, Emperor Alexander, Peasgood's Nonsuch, Allington Pippin, and Vox's Pomona among Apples; and Beurré Hardy, Emile d'Heyst, Beurré Baltet Père, Doyenné du Comice, and Durondeau among the Pears as being especially noteworthy (Silver-gilt Hogg Medal).

Lady TATE, Park Hill, Streatham Common (gr., Mr. W. Howe), staged six bunches of Black Alicante Grapes, totalling 26 lb. in weight. In addition to large-sized bunches, the berries were well coloured (Silver Knightian Medal).

Mr. J. F. WILLIAMSON, Summerhill, Mallow, exhibited tubers of his new Potato "Duchess of Cornwall" (Silver Banksian Medal).

Messrs. J. AMBROSE & SON, The Nurseries, Cheshunt, staged a basket of their new Grape "Melton Constable."

Several seedling Apples were presented to the Committee for award, but none was equal to the required standard.

Seedling Melons were brought by Mr. G. Wythes, gr. to the Duke of NORTHUMBERLAND, and by Hon. F. G. WYNN, Carnarvon. The former exhibitor's fruit was oval, dark-skinned, with green flesh, of excellent flavour for a late Melon; while the Hon. F. G. Wynn's was a golden reticulated fruit with white flesh. Neither fruits received recognition by the Committee.

Twelve excellent fruits of Pitnaston Duchess Pear were awarded a Cultural Commendation, but there was no indication as to who exhibited them.

Messrs. BAKERS, Lichfield Street, Wolverhampton, set up an excellent collection of Potato-tubers in baskets, similar to their Gold Medal group exhibited recently at the Crystal Palace. The group was relieved by two velvet-covered stands near the centre of the group, on which were examples of many of the newer varieties (Silver-gilt Knightian Medal).

Messrs. CANNEL showed examples of Onion-bulbs—Ailsa Craig, Coconut, Water Bottle, Cranston's Excelsior, and Selected Giant (Silver Banksian Medal).

An excellent collection of vegetables was exhibited from the READING HORTICULTURAL COLLEGE. Whether it was Celery, Cucumbers, Tomatoes, Potatoes, Broccoli, Cauliflowers, or Carrots, the "dishes" had all been selected for quality rather than largest size; and the exhibit showed that very good vegetable culture is carried out under the direction of Mr. C. Foster. There were also excellent Apples and Pears from the same establishment (Silver-gilt Knightian Medal).

AWARDS.

Bullace "The Langley."—This Plum is from a cross between Damson "The Farleigh" and "Black Orleans" Plum. The fruit is about an inch or more in length, of a dark blue colour, with a pronounced bloom. It is of excellent flavour, and is produced abundantly in clusters of twos and threes. Shown by Messrs. JAS. VEITCH & SONS, Ltd. (First-class Certificate).

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE annual dinner of this flourishing Society, which was founded just forty years ago, was held at the Holborn Restaurant on Wednesday evening, the 12th inst., W. A. Bilney, Esq., a member of the Council of the Royal Horticultural Society, and well known as an ardent horticulturist, being in the chair. Over a hundred members and their friends sat down at table.

The CHAIRMAN, in proposing the toast of "The United Horticultural Benefit and Provident Society," was able to point out the advantages to be derived from joining the Society. He particularly emphasised the necessity for the young gardeners of the present day to belong to it. A member if he pays on the higher scale (3s. 6d. per quarter) will, if laid aside by illness, receive for the first six months 18s. per week, and half that amount for the next six months. If his illness should continue he will be put on the Benevolent Fund, from which he will receive such an allowance as the Committee may decide. A member who pays on the lower scale (6s. 6d. per quarter) will receive during illness the sum of 12s. for the first six months, with half this sum for the next six months, he, too, if his sickness still continues, being placed on the Benevolent Fund.

When he reaches the age of seventy he receives all the money standing to his credit in the books of the Society, while if he should die his nominee would receive all moneys due to him.

Then again, there is the Convalescent Fund, founded by Mr. Sherwood, of Hurst & Son, several years ago. This, if the doctor certifies that the member, if recovering from an illness, would be benefited by a change, provides that for three weeks the sum of ten shillings weekly shall be paid, in addition of course to his sick pay. This Fund—a purely voluntary one—we should like to see taken more advantage of, as few members seem to know what it was really started for. The young gardeners should join and so help themselves, and at the same time provide for a rainy day.

Mr. W. COLLINS, Secretary, whose address is 9, Martindale Road, Ballham, will be pleased to give all the information that may be desired. As showing the stability of the Society, we may point out that the invested funds now amount to close on £23,000, the membership being over 1,100. We trust that a Society such as this, which is working to assist and lighten the burden of gardeners laid aside by illness, will increase its membership largely. We heartily commend it to all gardeners throughout the kingdom.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 14. The autumn session of this Society commenced in earnest on the above date, and there was a good display of plants.

S. GRATIX, Esq., Whalley Range (gr., Mr. Cypher), exhibited several good plants, *Cattleya* × *Lottie* being one of the best. It is a hybrid between *C. Aclandiae* × *C. Trianae* var. *Backhouseana*. In form it is intermediate. None of the colouring of *C. Aclandiae* is, however, apparent, the general colour being deep mauve, with a deep amethyst lip (Award of Merit). *Cypripedium* × *Baron Schroeder* also received an Award of Merit.

Mrs. S. GRATIX exhibited a fine plant of *Cattleya* × *Souvenir de Queen Victoria*, the second of which has been seen in Manchester.

E. ROGERSON, Esq., Didbury (gr., Mr. Blomley), exhibited a good group of Orchids, for which a Silver Medal was awarded. In this group *Cypripedium* × *Meinon* var. *superbum*, *C. Hitchense*, *Oakdene* variety, received Awards of Merit. Other plants noticeable in the group were *Cypripedium Charlesworthii*, *Oakdene* variety, alias *C. C. picturatum*.

T. MILLER CROOK, Esq., Houghton, Lancashire (gr., Mr. Perks), staged a nice group of plants, including *Cypripedium* × *Lord Derby*, *C. Oliva*, a fine form; *Cattleya Harrisonae*, variety *Alexandre*, *Lelio-Cattleya* × *bletchleyensis* (Vote of Thanks).

R. LE DOUX, Esq., West Derby (gr., Mr. Davenport), received an Award of Merit for *Cypripedium* × Mrs. Fred Hardy, and a magnificent form of *C. Charlesworthii*; this latter was a splendid example of good culture, the gardener being voted a Bronze Medal as a reward.

Dr. HODGKINSON, Wilmslow (gr., Mr. Moore), was voted an Award of Merit for *Lelio-Cattleya* × *Cappel*, *Grange variety*, a charming hybrid.

G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr., Mr. Shill), exhibited a good form of *Cypripedium insigne*, called "New Hall Hey var.," a fine, large, and well-marked flower; also a hybrid (of whose parentage there is a doubt) called *C. Elmierianum*. The latter received an Award of Merit.

Messrs. JOHN COWAN & Co., Gateacre, received Awards of Merit for *Lycaste Skinneri* variety "Surprise," with buff-coloured segments; and *Cattleya* × *Portia* variety *magnifica*. This firm received a Bronze Medal for group.

Messrs. SANIER & SONS, St. Albans, had a bright group of plants, for which a Bronze Medal was awarded.

Messrs. CYPHER & SONS, Cheltenham, also staged a nice bright lot of plants, and were awarded a Bronze Medal.

T. STATTER, Esq., Whitefield (gr., Mr. Johnson), again exhibited the original plant of *Cattleya* × *Hardyana*, which has now been in cultivation close upon twenty years. The plant is in splendid health, and reflects credit upon its grower (Vote of Thanks). P. W.

LOUGHBOROUGH FRUIT SHOW.

OCTOBER 4.—The annual exhibition of fruit was held on the above date in the Corn Exchange. There was a good display of hardy fruits, flowers, and vegetables. Upwards of 400 dishes of fruit were staged. Messrs. J. R. PEARSON & SONS contributed 100 dishes of Apples and Pears of a high standard of excellence. Messrs. B. HURST & SON, Burbage Nurseries, Hinkley, staged sixty dishes of excellent fruits of the highest order of merit, containing all the best varieties suitable for Midland Counties.

There was good competition in the open classes, and excellent Apples and Pears were staged.

For a collection of flowers, fruits, and vegetables, Mr. McVinish, gr. to Mrs. PERRY HERRICK, Beau Manor Park, was awarded a Silver Medal.

Messrs. J. SMITH & SON, Derby Road Nurseries, contributed early-flowering Chrysanthemums, Potatoes, and fruits.

In the evening Mr. E. MILES, of the Kingston Institute, lectured upon his experimental work in raising new varieties of Potatoes.

EPPING FOREST FORAY.

The report of this Society is unavoidably postponed.

BOTANICAL LECTURES AT CHELSEA.

SIR WILLIAM THISELTON-DYER, K.C.M.G., LL.D., F.R.S. (Director of the Royal Botanic Gardens, Kew), delivered his second lecture on "Modern Botany and its Problems," before a large audience of advanced students and many eminent botanists, on Wednesday, October 19. Proceeding with the investigation of chlorophyll, its importance was shown in the fact that all the sources of carbon from which we draw upon are derived from the de-oxidation of carbon-dioxide by this substance. One important point that is striking is the relatively small amount of chlorophyll present in living plants to carry on the work of carbon assimilation. Church made a calculation of the amount present in a square yard of foliage, and found the quantity to be only from 1½ to 3 grams in weight. Chlorophyll is an easy substance to extract, but a most evasive substance to investigate, as it undergoes a change almost immediately, rapidly becoming oxidised and disintegrating. Acids, however weak, are quite capable of producing this reduction, the vegetable acids themselves dissolving out with the chlorophyll, almost immediately producing the change. The first action is to reduce the chlorophyll to phyloxanthine, a substance not to be confused with xanthophyll. Analogous bodies were met with in the products of the disintegration of chlorophyll as are found in blood of animals. Xanthophyll is a body quite distinct from chlorophyll, and it is due to the presence of the former that the beautiful autumn tints of leaves are produced. The xanthophyll is merely a colouring matter which has been hidden by the chlorophyll, which, breaking up and dispersing in the autumn, allows the xanthophyll to assert itself. The interesting fact has been discovered that the colour of the yolk of an egg and that of a yellow Nasturtium flower are identical. Physical investigations, although discounted by SACHS, have proved most valuable. Spectrum analysis has been of great value. The works of DAUBENEY were referred to. By means of spectrum analysis, TIMIRIAZEFF, a Russian investigator, found that only 6·5 per cent. of light is really available to do the work in the chlorophyll corpuscles. Under normal conditions it was found at Kew that in intense light, while 27 per cent. of solar heat was absorbed, only a very small proportion was doing the work. Plants in this country cannot depend on direct light. We may regard the amount available as equivalent to that derived from a northern sky in summer, and of this solar radiance 95 per cent. is absorbed. Chlorophyll absorbs and decomposes CO₂, and also discharges aqueous vapour into the atmosphere. We find by experiment in the laboratory that the decomposition of CO₂ requires high and intense heat. This is effected in the chlorophyll corpuscle by the agency of solar light. Light is only appreciable to us inasmuch as it affects our visual organs, yet rays of light are present which we are not able to appreciate. ROBERT HUNT recommended the adoption at Kew of green glass under which to grow plants, but by this means all the red rays of the spectrum were cut out, and it is from these rays that the products of assimilation are formed. The plants failed to flourish under these conditions, but quickly improved when white glass was substituted. The proper course is not to change the composition of the necessary light, but to regulate its intensity by suitable shading to the plant's requirements.

Obituary.

FREDERICK G. LLOYD.—We regret to record the death, on the 15th inst., of Mr. F. G. Lloyd, late High Sheriff of Buckinghamshire, at his residence, Langley House, Slough, at the age of fifty-nine years. Mr. Lloyd will be known to some of our readers as a member of the Council of the Royal Horticultural Society. He was a frequent visitor to the fortnightly meetings, and had a great love for gardening. The interment took place at Watford on the 20th inst.

MATHEW RIDLEY.—We regret to have to record the death of Mr. Mathew Ridley, Superintendent of the Government Horticultural Gardens, Lucknow. He died on September 17, at the Bulrampur hospital, after a painful illness. Mr. Ridley was to have retired from the service on the 30th of this month. The deceased was one of the oldest gardeners in India. He was one of a batch of fourteen or fifteen Kew men brought out by Lord Mayo in the early seventies with the object of growing American Cotton in India. After the break up of the special Cotton Department, within four or five years after its inception, Mr. Ridley was posted to the charge of the then Model Farm at Cawnpore, which was, however, more of an ornamental garden than a farm.

Mr. Ridley did not remain there long, and was sent as Assistant to Dr. E. Bonavia, who then had charge of the Government Gardens at Lucknow. When Dr. Bonavia reverted to his duties as Civil Surgeon some two or three years afterwards, Mr. Ridley was appointed to the charge of the group of gardens around Lucknow. During his incumbency he did much not only to improve and beautify the Wingfield Park and the Horticultural Gardens, but he laid out the Husainabad and Victoria Parks, the Shah Najuf and Kaiserbagh Gardens, and added much to the beauty of the Great Imambara, the Canning College Tombs, and the Old Residency grounds. Indeed much of the floral and sylvan beauties of Lucknow must be ascribed to the labours of Mr. Ridley, who was a very good landscape gardener, and a lineal descendant of the martyr, Bishop Ridley. He leaves a widow and eight children. Mr. Ridley is succeeded at Lucknow by Mr. W. Gollan Superintendent of the Government Botanical Gardens, Saharanpur. *Indian Planting and Gardening, September 24, 1904.*

H. COSTER.—It is with great regret that we have to announce the death, on the 13th inst., at the age of fifty-six years, of Mr. H. Coster, for nearly thirty years gardener at Froyle Park, Alton, Hants. The deceased took a leading part in all matters connected with parochial affairs. He was a manager of the National Schools, and Chairman of the Parish Council, &c. He was held in the highest esteem by all who knew him, but particularly so by the present owner of Froyle, Sir Hubert Miller, Bart. He leaves a widow and large family, most of the children being grown up.

MARKETS.

COVENT GARDEN, October 19.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12 0	Fiens elastica, per		
Arbor Vitæ, per			dozen	9	0-24 0
doz.	9	0-18 0	Lilium speciosum		
Aspidistras, doz.	18	0-36 0	rubrum, per		
Aucubas, per doz.	4	0-8 0	dozen	8	0-10 0
Australian Bush			Lycopodiums, per		
Ferns, dozen	10	0-32 0	dozen	3	0-4 0
Cape Gooseberry,			Marguerites, per		
per dozen	18	0-36 0	dozen	6	0-10 0
Chrysanthemums,			Palms, variety		
per dozen	4	0-18 0	dozen	3	0-20 0
Cocos	12	0-18 0	Pelargonium's,		
Crotons, per doz.	12	0-24 0	scarlet, per		
Cyperus, per doz.	3	0-4 0	doz.	4	0-6 0
Dracenas, variety,			Pteris tremula, p.		
dozen	6	0-18 0	dozen	4	0-8 0
Eriacs, per dozen	12	0 18 0	Solanums, per		
Euonymus, vars.,			dozen	4	0-6 0
per dozen	4	0-10 0	Spiræas, per doz.	10	0-12 0
Ferns in var., per			Tropeolum, per		
doz.	3	0-12 0	doz.	3	0-4 0

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, single and			Lilium lanc-		
double, per doz.			folium	1	0-2 6
spikes	1	6 -	Lily of the Valley	4	0-12 0
Bouvardias, doz.	4	0-8 0	Lobelia cardina-		
Callas, per doz.	4	0-6 0	lis, 12 bunches	4	0-6 0
Cape Gooseberry,			Marguerites, yel-		
per doz, bunch	6	0-8 0	low, 12 bunches	0	9-1 8
Carbations, doz.			Marguerites, white,		
bunches...	9	0-36 0	dozen bunches	2	0-6 0
Chrysanthemums,			Michaelmas Daisy,		
dozen bunches	3	0-24 0	per doz.	3	0-6 0
Coreopsis, p. doz.	0	6-1 0	Mimosa, packet...	1	6 -
Dahlias, per doz.	3	0-6 0	Orchids, various,		
Eucharis, doz.	1	6-2 0	per dozen	2	0-8 0
Ferns, Asparagus,			— Cattleyas	6	0-12 0
per bunch	0	8-1 6	Pancratiums, doz.	2	6 -
— French, doz.			Pelargoniums,		
bunches	0	3-0 4	zonal, dozen		
— Maiden hair,			bunches	3	0-6 0
doz. bunches	4	0-8 0	— white, dozen		
Foliage, various,			bunches	3	0-6 0
per dozen	2	0-6 0	— double, scarlet,		
Gardenias, box	1	0-2 0	per doz. bun.	3	0-6 0
Gypsophila, doz.			Roses, Mermet,		
bunches	2	0-4 0	per bunch	1	0-2 0
Gladiolus, various,			— white, bunch	1	0-2 0
dozen bunches	4	0-6 0	— pink, bunch	1	0-3 0
Golden Rod, per			— red, bunch	0	6-1 6
dozen	3	0-4 0	— Saffranos, per		
Heather, Scotch,			bunch...	1	0-1 6
per bunch	0	6-0 8	— Sunrises, bun.	1	0-1 6
Honesty, bunch	1	0 -	Smilax, 12 bunch.	1	6-3 0
Lilac, French	2	0-4 0	Statice, 12 bunches	3	0-6 0
Lilium auratum			Staphanotis	1	0-2 0
per bunch	2	0-3 0	Tuberose on		
— Harrisii, per			stem, bunch	0	9-1 0
bunch	3	6-4 0	— short, p. doz.	0	2-0 4

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, bushel	1	6-2 6	Grapes, Muscat		
— English, sieve			A, per lb.	2	0-3 0
or half bus.	1	0-6 0	B, per lb.	0	9-1 6
Bananas, bunch	7	0-10 0	— Canon Hall		
— loose, dozen	1	0-1 6	A, per lb.	3	0-4 0
Blackberries, peck	1	6 -	B, per lb.	1	6-2 6
Chestnuts, per bag	5	0-9 0	— Alicante, lb.	0	4-1 0
Cobnuts, per lb.	0	4 -	Lemons, per case	24	0-35 0
Figs, per box	0	9-1 6	Melons, each	0	4-0 6
Grapes, Hambro'			Oranges, per case	10	0-18 0
per lb.	0	4-0 8	Peaches A, per		
— Gros Maroc,			doz.	12	0-18 0
per lb.	0	8-1 0	— B	2	0-6 0
— Gros Colmar,			Pears, per sieve...	1	6-4 6
per lb.	0	6-1 3	Pines, each	2	6-3 6

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe,			Mushrooms (house)		
per dozen	2	0-3 6	per lb.	1	0-1 6
— Jerusalem,			Onions, pickling,		
sieve	2	0 -	per sieve	3	0-4 0
Beans, dwl., p. lb.	0	6 -	— per bag	5	6-6 0
— Scarlet Runrs.			— per case	7	0-7 6
per bushel	1	6 -	Parsley, per doz.		
Beetroot, bushel	1	0-1 6	bunches	0	6-1 0
Brussels-Sprouts,			— sieve	1	6 -
sieve	1	0-1 6	Parsnips, per bag	2	6 -
Cabbages, tally	1	6-2 6	Potatoes, per ton	60	0-80 0
Carrots, doz. bun.	1	6-2 0	Radishes, per		
— bag	2	0-3 0	dozen bunches	0	9-1 0
Cauliflowers, doz.	0	9-1 0	Salad, small, pun-		
Celeriac, per doz.	1	6-2 0	nets, per doz.	0	9 -
Celery, 12 bunch.	3	0-14 0	Shallots, sieve	3	0 -
Cress, doz. pun.	0	9 -	Spinach, p. bush.	1	0-1 6
Cucumbers, doz.	1	6-2 6	Tomatoes, Chan-		
Endive, per doz.	1	6 -	nel Islands,		
Garlic, per lb.	0	2 -	per lb.	0	2 -
Horseradish, fo-			— English, doz.	2	3-3 0
reign, p. bunch	1	0-1 2	Turnips, doz.	1	6-2 0
Leeks, 12 bundles	1	0-1 3	— bag	2	0 -
Lettuces, Cabbage,			Vegetable Mar-		
per dozen	0	9 -	rows, per doz.	0	9-1 0
— Cos, per doz.	1	6 -	Watercress, per		
Mint, doz.	1	0-1 6	dozen bunches	4	0 -

REMARKS.—The Dwarf Beans are new ones. Large Apples, such as Lord Derby and Warner's King, fetch 3s. per bushel; Blenheim's, 3s. 6d. to 5s.; American Apples in barrels, 7s. to 14s.; Californian, cases, 6s. to 7s. French Medlars, per case, 5s. to 7s.; Pomegranates, per case, 8s. to 9s. 6d.; Persimmons, per dozen, 1s. to 1s. 6d.; Grape-Fruits, per case, 10s.; Gourds from Madeira, per dozen, 10s. to 12s.; barrel Grapes, 7s. to 17s.; Mushrooms, per sieve, 3s. to 4s.; English Onions, per cwt., 6s. 6d. to 7s. Marrows and Runner Beans are practically past.

POTATOS.

Various, home-grown, 60s. to 80s. per ton, *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

THERE are not many new pot-plants. Mr. E. Rochford has commenced marketing Cyclamen, while Messrs Williams & Co. are the first growers this season to bring in Chinese Primulas: at present only the red are seen. White Marguerites are good. Chrysanthemums are now very abundant; extra-good plants of Soleil d'Octobre still realise as much as 21s. per dozen. Mrs. Wingfield is a pleasing pink variety: good reds and crimsons still remain scarce; whites of various sorts are good. Erica gracilis and E. Caffra are plentiful, but hymenalis is later than usual this season. Hoteia (Spirea) japonica is good, but not much in demand. Liliums in pots are now scarce, but there are some good specimens of Harrisii. Lily of the Valley in pots is very good. Foliage plants occupy by far the larger portion of

the market. Cyperus laxus and C. alternifolius are both seen. Tall, well-coloured plants of Codium (Croton) Morti, one of the most showy of the large-leaved yellow varieties, are seen; these and Cordylines are in small request. Ferns sell better; the supply, however, is excessive. Newly-imported Aspidistras, green Dracenas, Arancaria excelsa, and variegated Euonymus, both latifolia aurea and l. alba, are plentiful. Laurels, Conifers of various sorts, and Veronicas are abundant; trade for these plants has been slow, but should now improve. Palms are plentiful; many large Kentias, Cocos flexuosa, and Latanias are obtainable. Strong plants of climbing Roses, such as Gloire de Dijon, Marechal Niel, W. A. Richardson, and others are now seen, and hardy climbers of almost all sorts are numerous. Plants of Clematis and Ampelopsis are particularly good. Golden Privet and the green Ligustrum ovalifolium are obtainable in strong plants for hedges.

CUT FLOWERS.

Chrysanthemums are the main feature in cut flowers, of which excellent blooms are now seen. Those from the open are with few exceptions very inferior. It is evident that growers, in anticipation of frost, have cut their flowers very freely. Asters are plentiful; good pink and purple varieties are seen, which sell moderately well. Double scarlet Pelargoniums are plentiful, also Ivy-leaved varieties in several shades of colour. Carnations are numerous, especially the scarlet variety, Winter Cheer. White varieties are also plentiful, but rather small. Roses from indoors are now of better quality; Niphetos is particularly good; Kaiserin Augusta Victoria is also abundant; Bridesmaid, Perle des Jardins, Sunset, and Liberty are obtainable. There are still many Roses from the open. Orchid bloom appears over plentiful. Excellent Cattleya blooms remained on sale quite late in the morning. Odontoglossum crispum, Cypripediums, and Phalenopsis Schilleriana are also seen. Tuberose are plentiful, many being on the stems; the top price for picked blooms is 2s. per gross. Eucharis, Gardenias, and Lily of the Valley continue in quantity. Single white Primula, also the double white, are seen, but find little demand. Paneratiums do not realise high prices. Lilium longiflorum now make better prices; in addition are L. hanseaticum, L. rubrum, L. tigrinum, and L. auratum. Callas are now more numerous. White Lilac realises a good price. Lobelia cardinalis, Gladioli in mixed colours, and yellow Marguerites are all plentiful. Cut foliage of all descriptions is well maintained, but the sharp frost on Saturday morning will reduce the supply of that of autumn-tinted deciduous shrubs.

ANSWERS TO CORRESPONDENTS.

CELERY: J. F., Portobello. Variegated Celery is a known garden plant, but not much grown.

CLEMATIS: C. A. B. We expect your plants are attacked by disease, but cannot definitely say so unless specimens are sent us.

CYPERIDIUM LEAVES SPOTTED: E. F. The damage is caused probably by too high temperature in the house in which they are grown, or by condensed moisture falling back on the plants. It may be that both conditions may contribute. Cut off bad leaves and grow the plants on.

DECAYED MOSS: T. L. The sample of moss you send would not be so valuable as ordinary peat for cultivating plants. It would retain moisture very well, but it has not the amount of humus that is contained in peat, and would afford but little nutriment to the plants.

FRUIT CULTURE AND FARMING IN SOUTH AFRICA: C. F. W. We know of no book that treats specially of the subjects you name. Procure a copy of *Tropical Agriculture*, by P. L. Simmonds, published by Messrs. E. & F. N. Spon, London; also *The Fruit Garden*, by Bunyard and Thomas, price 21s. 6d., post free, from our Publishing Department. By the use of these books, whilst intelligently studying the conditions of the locality in which you settle, you should be able to succeed.

GRASSES FOR LAWN: Acanthus. The following grasses, if used in the proportions described, will make as good a lawn as could be wished—Cynosurus cristatus (Crested Dogstail), 50 lb; Festuca ovina tenuifolia (Sheep's Fescue), 25 lb.; and Poa nemoralis (Wood-meadow Grass) 25 lb. The quantities required for one acre would be about 80 lb. If the ground is heavy clay, use rather less Cynosurus, and substitute Poa pratensis.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time;

they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.*—*T. S. U.* Gansel's Bergamot.—*W. B.* 1, Beurré Hardy; 2, over-ripe when unpacked; 3, immature, probably Glout Morceau; 4, Pitmaston Duchess. Plum, Kirk's Seedling.—*E. H.* 1, rotten; 2, Marie Louise; 3, Beurré Diel; 4, Ne Plus Meuris; 5, Duke of Devonshire; 6, Court Penda Plât.—*J. Geddes.* 1, Belle Dubois; 2, Lady Henniker; 3, Chesbunt Pippin; 4, Cornish Gilliflower; 5, The Queen; 6, Castle Major.—*T. M. N.* 1, Syon House; 2, Beurré Superfin; 3, Potts' Seedling; 4, Blenheim Orange; 5, Yorkshire Beauty; 6, too small to be named.—*Somerset.* 1, Warner's King; 2, Cellini; 3, Sturmer Pippin. Begonia President Carnot. You should not send flowers with fruit.—*E. M.* 1, Beauty of Kent; 2, Scarlet Nonpareil; 3, Duchesse d'Angoulême; 4, Durondeau; 5, Beurré de Capiaumont; 6, Broom Park.—*W. G. Jones.* 1, Beurré Bosc; 2 and 3, Beurré Diel; 4, Beurré Capiaumont; 5, Glout Morceau; 6, Knight's Monarch.—*J. H. H.* 1, Warner's King; 2, Lane's Prince Albert; 3, Lemon Pippin; 4, Annie Elizabeth; 5, Kerry Pippin.—*Norfolk Reader.* 1, grand fruit of Tower of Glamis; 2, Cox's Pomona; 3, Washington; 4, Brabant Bellefleur; 5, Cox's Orange Pippin; 6, Bramley's Seedling.—*G. A. R.* 1, Cellini; 2, Mrs. Phillimore (splendid flavour); 3 and 4, Stirling Castle; 5, Bramley's Seedling; 6, Duchess of Oldenburg.—*W. H. B.* 1, Baron de Mello; 2, Thompson's Pear; 3 and 3, Doyenné du Comice; 4, Beurré Baltet Père; 6, Beurré Bachelier.—*Dewar.* Summer Strawberry.—*E. Lazenby.* Warwickshire Pippin.—*J. C. W.* 1, Scarlet Leadington; 2, rotten.—*Constant Reader.* 1, King of the Pippins; 2, Gilliflower (not Cornish); 3, Mank's Codlin; 4, Cullen; 5, Scarlet Golden Pippin; 6, Hereford Pearmain.—*G. R.* 1, Beurré Diel; 2, Knight's Monarch; 3, Black Worcester; 4, Cellini; 5, Lady Henniker; 6, Yorkshire Greening.—*R. Goodwin.* 1, too small to name; 2, Small's Admirable; 3, Scarlet Nonpareil; 4, Downton Pippin; 5, Forfar; 6, Cox's Orange Pippin.—*R. Wade.* 1, Chesbunt Pippin; 2, Flanders; 3, Cellini; 5, Franklin Golden Pippin; 6, Beurré d'Amanlis.—*S. R.* 1, Hollandbury; 2, Beauty of Kent; 3, Golden Noble; 4, Tower of Glamis.—*H. S.* 1, Too small to be named; 2, Fearn's Pippin; 3, Small's Admirable; 4, Wellington; 5, Rosemary Russet; 6, Scarlet Golden Pippin.—*A. J. H.* 1, Beurré Bennet; 2, Beurré d'hiver; 3, Duke of Devonshire; 4, Bismarck; 5, Bramley's Seedling; 6, Nanny.—*Reader.* 1, Doyenné Boussouch; 2, Scarlet Pearmain; 3, Alfriston; 4, Newton Wonder; 5, Lane's Prince Albert; 6, Wellington; 7, Warner's King.—*H. C.* 1, Northern Greening; 2, Cox's Orange Pippin; 3, Alfriston; 4, Minchull Crab; 5, Cellini; 6, Annie Elizabeth.—*W. Ruse.* 1, Round Winter Nonsuch; 2, Royal Russet; 3, Mank's Codlin; 4, Winter Hawthornden; 5, Old Hawthornden.—*C. H.* 1, Gooseberry Pippin; 2, Hollandbury; 3, Reinette de Canada; Pear, Beurré d'hiver.—*Fram.* 1, Waltham Abbey Seedling; 2, Pope's Apple; 3, Grange's Pearmain; 4, Winter Queening; 5, White Nonpareil; 6, Striped Beafin.—*F. Lane.* 1, White Westling; 2, Castle Major; 3, Ribston Pippin; 4, Alfriston.—*A. S. Rugby.* 1, The Queen; 2, Cox's Orange Pippin; 3, Sturmer Pippin; 4, Beurré d'Amanlis; 5, Doyenné du Comice.—*Roy.* 1, Newton Wonder; 2, please send again; 3, Bellissime d'hiver; 4 and 5, Cox's Orange Pippin; 6, Wellington.—*E. A. D.* 1, Fillbasket; 2, rotten; 3, Lady Derby; 4, Wellington; 5, not recognised.

NAMES OF PLANTS: See note under "Names of Fruits."—*E. E. W.* Amelanchier vulgaris.—*Nil Desperandum.* Aster diffusus.—*T. A.* 1, flower decayed. Probably Odontoglossum grande; 2, Oncidium tigrinum; 3, Cypripedium × Harrisianum; 4, Selaginella cassia; 5, Cotoneaster microphylla; 6, Taxodium distichum.—*A. R. T.* Oncidium tigrinum

unguiculatum; 2, O. candidum, often called Palumbina candida.

PEAR BEURRÉ RANCE: *J. R. Rudge.* This being a very late-ripening variety, the fruits should be permitted to hang on the tree until very late in the autumn. In most seasons they do not require to be gathered until late in October or even the middle of November, and in mild winters we have seen the fruits hanging on the trees until the beginning of December. It is early gathering that causes the fruits to shrivel.

NATIONAL ROSE SOCIETY'S CATALOGUE: *J. B.* Write to Mr. Edward Mawley, Rosebank, Berkhamstead.

PLANTING FOREST TREES. Correction. In the concluding paragraph of Mr. Webster's note on p. 274, the word "one" should have been "acre."

PLUM-TREE: *H. W. M.* Unless we saw the tree, a definite statement would be unwarranted. "Gumming" or "Gummosis," however, is usually the result of the attack of a fungus, the mycelium of which appears to develop a ferment which penetrates the adjacent cells and transforms the contents of the cells and the cell-walls into gum. Some information in regard to this fungus will be found in the *Gardeners' Chronicle*, n.s., xxii., pp. 239, 410. You state that the tree has been root pruned, "cutting away the shoots or fibres." Such treatment will not lessen the gumming, because the fibres are the only portions of the roots that are of use to the tree, except for holding it in position in the soil. Instead of doing this again, dig out a trench 2½ feet away from the stem, and carefully fork away the soil from the roots, in order to cut back the thickest of them, thus inducing them to make more fibres, which in turn will have root "hairs," capable of conveying food to the tree. Cut off any roots that are growing straight down into the soil, as these would reach the subsoil and prove mischievous. Let the branches have comparative freedom from the pruning-knife for a time.

ROYAL HORTICULTURAL SOCIETY'S EXAMINATIONS: *Pembroke.* You can obtain all information in regard to these examinations by applying to the Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster.

SIX BEST DESSERT APPLES FOR EXHIBITION: *E. H.* If well grown and perfectly developed, the following varieties would not be easily surpassed: Cox's Orange Pippin, American Mother, Ribston Pippin, Allington Pippin, Washington, and Reinette Precoce.

SIX BEST CULINARY APPLES FOR EXHIBITION: *E. H.* Peasgood's Nonsuch, Warner's King, Emperor Alexander, Stone's or Belle Dubois, Bismarck, and Mère de Ménage. The above have been exhibited by Mr. Woodward, of Barham Court Estate Gardens, and they have never been surpassed at the Royal Horticultural Society's Fruit Shows. In our next issue we shall publish some information in regard to the best varieties of Apples to plant in different localities, not alone for exhibition, but for their quality, general utility, and cropping qualities.

SULPHATE OF POTASH: *J. S. C.* Sulphate of potash is very much more rich in potash than kainit is, and may be described as purified kainit. Muriate of potash is not the same thing, but is the potash equivalent of common salt (chloride of sodium). It is a dangerous manure to apply to the active rootlets of growing plants, and Mr. Cousins states, in his *Chemistry of the Garden*, that it is not difficult to kill a plantation of Strawberries by manuring them with muriate in April or May. For ordinary purposes therefore sulphate of potash should be used; but the careful gardener might experiment very cautiously with the muriate, because it is said to be more beneficial than the sulphate for Potatoes and Vines upon some soils. Sulphate of potash known "as 90 per cent." is nearly four times as rich in potash as kainit. This manure may be mixed with potting soil, or be applied to Vine-borders during the growing season.

THE HOEING OF WALKS: *D. M.* The hoeing of garden paths is not practised quite so frequently in the South of England as in Scotland, the reason being that in the former district a good binding gravel is employed, which, if

properly laid and rolled in the first instance, will remain as hard as a board until a fresh application of gravel becomes necessary. In some gardens where a binding gravel cannot be obtained, and in others under the direction of a gardener who has been used to the loose gravelled paths common North of the Tweed, the paths are hoed and raked just as they are done in Scotland. The effect of a clean, nicely-raked, loose-gravelled path is very good, but the disadvantages are that the rake is needed almost constantly in parts frequented by vehicles or wheelbarrows, and loose gravel is not the most comfortable material to walk upon in thin-soled shoes! A hard-rolled path does not impress one so much with evidence of "up-keep" as the gravel freshly arranged by means of the rake each morning would do; but if the gravel is kept clean and bright, the walks appear tidy, can easily be cleansed from soil or rubbish that may be inadvertently shed upon them, and they afford the most agreeable base for walking upon and for general locomotion. Where it is the practice to hoe up the gravel and rake off the weeds afterwards, we would recommend the use of the Dutch-hoe in preference to employing the draw-hoe for the purpose.

TREE CARNATION: *A. F. C.* The colour is delicate and pleasing, but the flowers have little or no scent, which is a great disadvantage. Carnations have been developed to such an extent that if new varieties are to receive recognition they must be exceptionally meritorious.

VIOLETS: *J. S.* In your northern locality, at an altitude of 400 feet above sea-level, we are not surprised that you are unable to obtain Violets out-of-doors during all the year; nine or ten months would probably be the maximum period. By employing frames for their cultivation you would be able to do so, providing that most of the heat is obtained from fermenting materials rather than from hot-water pipes.

VINES: *J. T. U.* The cause of shrivelling is due to the Vines having received a check before the Grapes had become properly ripened. The check may have resulted from a deficiency of root moisture, or from the roots being in a cold subsoil, or from a too rapid decrease in atmospheric warmth. It is impossible to say which has been the cause without an examination of the conditions of the border and house in which the Vines are growing. In one of the bunches there is a little "shanking" observable which suggests that the roots are not so near to the surface as it is desirable they should be.

WATER EXPERTS: *H. H.* We cannot undertake to recommend water experts. You had better advertise.

YAM: *C. B.* Do you mean Dioscorea or Convolvulus? Both are herbaceous climbers, requiring a stove temperature. Generally the species have very ornamental leaves. The small inconspicuous flowers of Dioscorea are of whitish or of yellowish colour, those of Convolvulus are very conspicuous. In the winter months Yams should be kept in a cool (but not cold) place, either in the pots or in perfectly dry sand. The best soil to grow them in is a compost of equal parts of rich light loam and well-rotted manure. They should be provided with plenty of root-room, and be liberally supplied with water during the growing season, gradually diminishing the quantity as the growth becomes mature. They are easily propagated by division of the tubers when at rest. The bulbs you send might be those of Tuberose, but it is unsafe to guess. Send when in flower.

COMMUNICATIONS RECEIVED.—*F. W. B.*—*W. G. S.*—*C. S.*, Naples—*L. Spath*, Berlin—*Lafayette & Co.*—*G. M.*—*J. K. Menability*—*D. H.*, Dublin—*G. S. B.*—*W. B.*—*J. C.*—*C. D.*, Camberley—*D. J.*—*T. A. S.*—*G. K.* (photograph, many thanks, often given), Walsingham—*F. J. A.*—*J. B. C.*, Ceylon—*Count de Kerchove* (with thanks)—*A. J. H.*—*J. Milburn*—*F. N.* & *Co.*—*Fiona*—*D. P.* & *Son*—*E. B.* (X. Y.)—*T. P.*—*J. J.*—*G. F. M.*—*A. D.*—*R. S.*—*G. B.*—*J. S.* & *Sons*—*W. C. L.*—*F. M. B.*—*Sander*—*Violets*, *C. D.* & *J. H.*; reply later—*J. T.*—*Colonist*—*W. E. Gambleton*—*A. H.*—*B. L. W.*—*Algemeene Vereeniging Voor Bloembollencultuur*, Haarlem—*E. M.*—*C. E. C.*—*C. E. B. W.*—*Expert*—*W. B. Hartland*—*E. H. J.*—*A. H.*—*W. M.*—*R. D.*—*J. M.*—*W. B. H.*—*W. H. C.*—*W. P. T.*

(For Weather see p. x.)

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WHAT APPLES SHALL WE PLANT?

THE table accompanying this note (see p. 298) has been drawn up with a view of supplying an authoritative reply to the question often put to us, "What Apples shall we plant?" The precise answer to this question must of course differ according to circumstances and individual requirements, but we trust that the tables now given will furnish as trustworthy a general answer as can be expected. The information has been obligingly supplied to us by those private growers and commercial firms in all parts of the kingdom, from north to south and from east to west, who have been in the habit for many years past of furnishing us annually with reports on the condition of the fruit crops in their particular localities. In all we have availed ourselves of the opinions of one hundred and ninety-eight observers. The localities in which these observers reside are grouped in districts according to the plan adopted by the Meteorological Office, and followed in our weekly weather summary and in our detailed report of the fruit crops published annually.

The question addressed to our correspondents was this: "State which, in your opinion, are the six best culinary and the six best dessert Apples for your district." It is fair to assume therefore that in selecting the names they considered (1) capacity for making growth in the locality, (2)

cropping qualities, (3) quality of fruit. Although only six varieties were asked for, the list will in most cases afford planters a guide to the best twelve or even twenty-four varieties.

Eighty-nine varieties of culinary Apples in all are thus mentioned by our correspondents. Some of these are only noted once or twice in particular districts, whence we may infer that the conditions there are specially favourable; others are mentioned in all or nearly all the districts either by a few or by a relatively large number of observers. Such are Lane's Prince Albert, Warner's King, and Lord Suffield, which are recorded universally, with the possible exception of the Isle of Man, where there may be special reasons for their absence.

The six best cooking Apples for general purposes over the whole country, as deduced from this list, are, then, as follows:—

1. LANE'S PRINCE ALBERT, which heads the list (with 117 votes).
2. WARNER'S KING (109 votes).
3. LORD SUFFIELD (85).
4. ECKLINVILLE SEEDLING (83).
5. BRAMLEY'S SEEDLING (73).
6. DUMELOW'S SEEDLING, or WELLINGTON (68).

Besides these may be mentioned Keswick Codlin (52), Stirling Castle (52), Lord Grosvenor (49), Blenheim Orange (40). All the others have many fewer votes, or are only recorded locally. We may remark here that Blenheim Orange, though receiving only 40 votes as a culinary fruit, will be one of the first six of dessert fruits in the list we propose to publish next week.

In estimating the value of these reports stress must be particularly laid not so much on the absolute number of votes which any particular Apple may obtain as on its general diffusion. If one particular sort is mentioned in every district its general usefulness may safely be inferred. So if one variety is specially mentioned in one or two districts, it may be assumed that it is specially adapted for those districts; though when it has to compete with others in other localities it may be found less suitable.

The reader having ascertained which varieties are universally good, or approximately so, will then turn to the particular district in which he may happen to reside in order to see what special varieties have, by a process of natural selection, proved themselves to be the best adapted to that district.

The small number of votes given to a particular Apple in a district like the Orkney Islands, for instance, not specially suitable, or even ill adapted for Apple culture, will not of course prejudice an intending planter in Kent, where the conditions are particularly favourable. Again, it must be remembered that some of the newer Apples are at present not sufficiently widely or sufficiently largely distributed to allow of a correct assessment being made of their comparative merits in different localities. This points to the necessity of such a census as the present one being repeated every ten years or so.

In our present number we are enabled to give illustrations of the six favourite Apples for culinary purposes, for some of which we are indebted to Mr. Woodward, of Barham Court Estate, Maidstone. In our next issue we shall give a similar table relating to dessert Apples.

HARDY FLOWERS AT EDINBURGH BOTANIC GARDENS.

A VISIT to the Royal Botanic Gardens, Edinburgh, is interesting to a hardy plants man at almost every season, and although one does not look for large breadths of popular flowers, there are always a number of good plants to be seen. Towards the end of September one was struck with the beauty of the large and almost complete collection of hardy Heaths in the rock-garden, in which the various forms of *Calluna vulgaris*, including *Serlei* and other fine varieties, *Ericas*, *Daboecias*, &c., were in full bloom. A noteworthy plant was *E. tetralix Crawfordii*, a bright-coloured double form of the cross-leaved Heath, found a year or two ago in Connemara, and which Mr. D. S. Fish has rapidly propagated. *E. vagans* was also represented by some good forms. In the rock-garden a sloping bank of *Rosa Wichuraiana* was beautifully in flower. Among other plants observed was the pleasing little *Erythraea Mussoni*, better known as *E. diffusa*, a choice rock-plant with rose-coloured or pink flowers. Growing beside it was *E. Elodes*. Clumps of *Colchicums*—*C. speciosum*, *C. autumnale*, and others—brightened up the rock-garden, and looked well beside the green foliage of the mossy *Saxifragas*. By the margin of the small pond there are now a number of plants of *Phormium tenax*, in addition to the large clump which has been there for many years, and which has flowered well this season; also *Polygonum affine*, and some of the *Lythrums*.

The borders in front of the houses are interesting to those in search of new plants of horticultural value. The scarce *Celmisia spectabilis* has bloomed well this year, and its silvery foliage and distinct habit make it attractive even when out of flower. *Podophyllum versipelle*, with its handsome leaves, is a scarce Chinese plant; *Nierembergia gracilis* can be grown in places where the better-known *N. rivularis* cannot be successfully cultivated. Clumps of *Gladiolus princeps* were exceedingly bright. Good *Campanulas* and closely allied plants were noted. *Campanula amabilis*, a neat blue-flowered species; the better-known *C. versicolor*; a pleasing little *Wahlenbergia*, of a still undetermined species, and a plant of *Adenophora polymorpha*, with spikes of blue flowers. In a bed in one of the bays between the houses was a group of plants of *Delphinium sulphureum*; *D. cardinale* was also in flower.

One of the greatest improvements in these gardens within the last few years has been the formation of a large herbaceous border, which is reached by a path leading from opposite the Palm-house. It is backed by trees and shrubs, and the plants are arranged in bold groups of a kind, and in a pleasing fashion, devoid of formality. The aim is to have plants in bloom all through the season, and annuals are employed with good effect to supplement the herbaceous plants.

Groups of *Eryngiums*, among which were noticed the curious-looking *E. Sanguisorba*, the fine *E. agavæfolium*, not generally considered quite hardy, but which stood last winter in this border; *E. Zabelli*, and several others in excellent condition. A distinct plant of attractive habit is *Cnicus Falconeri*, a Himalayan plant which will be useful for bold effects. *Geranium grandiflorum*, *G. Wallichianum*, and other members of this useful genus are grown here, together with the best herbaceous plants in general cultivation, and many uncommon plants of considerable value.

A new feature of the gardens, now being developed, is that of planting small beds solely with one hardy plant. Among the many plants thus cultivated is the variegated form of the common *Lychnis dioica*, found by Professor Bayley-Balfour while on a botanising expedition. This plant makes a pretty bed with its green and creamy-yellow variegated foliage. *Caupanula cespitosa* furnishes another bed, while another was planted with a bright form of *Dianthus Carthusianorum*.

Among the seedling plants growing in the frames and propagating-pits was *Meconopsis bella*, and other new Himalayan Poppies. *S. Arnott*.

THE MOST SUITABLE APPLES FOR PARTICULAR DISTRICTS. (SEE P. 297.)

CULINARY APPLES. Total Number of Varieties mentioned—89.	Scotland, E. No. of Returns 15	Scotland, W. No. of Returns 13	England, N.E. No. of Returns 15	England, E. No. of Returns 10	England, Midland Counties. No. of Returns 45	England, Southern Counties. No. of Returns 43	England, N.W. No. of Returns 4	England, S.W. No. of Returns 24	Wales, No. of Returns 11	Ireland, N. No. of Returns 8	Ireland, S. No. of Returns 6	Channel Islands. No. of Returns 2	Isle of Man. No. of Returns 2	Total No. of Returns 198.	Total Votes
Albury Park Nonesuch ...						1	1							2	2
Alfriston ...	4	2	1	2	1	1	1			4	2	1	1	22	22
Annie Elizabeth ...			2	2	4	4		3	1	1			1	18	18
Batchelor's Seedling ...						1								1	1
Beauty of Bath ...						1		1						2	2
Beauty of Kent ...		1	2		4	1		3						11	11
Beauty of Moray ...	2													2	2
Beauty of Stoke ...											1			1	1
Bedfordshire Foundling ...					3									3	3
Bess Pool ...					1									1	1
Betty Geeson ...			1		1									2	2
Bismarck ...	2	2		3	6	8	1	2		2		1		30	30
Blenheim Orange ...	1		2	3	10	12		9	1		1	1		40	40
Bramley's Seedling ...	5	5	4	6	13	14		11	4	8	2		1	73	73
Bridgwater Pippin ...			1											1	1
Cardros Green ...		1												1	1
Carlisle Codlin ...						1								1	1
Cellini ...	3		1	1	3	2		1	2	1			2	16	16
Chelmsford Wonder ...						1								1	1
Councillor or Yorkshire Beauty						1								1	1
Cox's Pomona ...			1		1	2		1						5	5
Doctor Harvey ...				1										1	1
Domino ...			2		1	2								5	5
Duchess of Oldenburgh ...	4	1	1		3	2		1		1				13	13
Dumelow's Seedling ...	3	1	4	5	20	20	2	7	2	2	2			68	68
Dutch Codlin ...										1				1	1
Dutch Mignonne ...					1									1	1
Earl Cowper ...					1									1	1
Early Julian ...	1		1											2	2
Early Rivers ...	1				1									2	2
Ecklinville Seedling ...	7	5	7	3	15	19	1	11	7	2	2	2	2	83	83
Emperor Alexander ...		1		1	1	2				1				6	6
Flanders Pippin ...					1			1						2	2
Frogmore Prolific ...					2			1						3	3
Galloway Pippin ...		1	1											2	2
Gascoyne's Scarlet Seedling						1		1						2	2
Gloria Mundi ...		1	1			1		1						4	4
Golden Noble ...	2	1		2	5	2	1	1		2	1			17	17
Golden Spire ...	1	1	1			3	2							8	8
Grenadier ...		1	1		3	1	1			1	2			10	10
Hambleton Deux Ans ...						1								1	1
Hambling's Seedling ...											1			1	1
Hanwell Souring ...					1	3			1					5	5
Hawthornden ...	2	2		1	1	1	1	1	1		1	1		12	12
Hollandbury ...					1									1	1
Hormead Pearmain ...					1	1								2	2
Keswick Codlin ...	7	6	4	1	14	8	2	3	4	2	1			52	52
Lady Henniker ...				1		2								3	3
Lane's Prince Albert ...	3	6	8	7	27	32	1	18	7	4	3	1		117	117
Lincolnshire Holland Pippin ...					1									1	1
Loddington ...					3	4		2			1			10	10
Lord Derby ...	1	2		1	5	13			2	3	1			28	28
Lord Grosvenor ...	7	4	4	2	12	5	2	7	2	2	2			49	49
Lord Suffield ...	5	8	8	4	21	12	1	13	6	2	3	2		85	85
Manx Codlin ...					1	1				1				3	3
Mère de Ménage ...	1				7	1		4	1					14	14
New Cockpit ...			1											1	1
New Hawthornden ...	1	1	2	2	1	2		2	1					12	12
New Northern Greening ...							1							2	2
Newton Wonder ...			4	1	7	9		8		2	1	1		33	33
Norfolk Beefing ...				1	1									2	2
Northern Dumping ...	1													1	1
Northern Greening ...	1	1			9	2		1	1	1	1		2	19	19
Peasgood's Nonesuch ...	1	2	3	3	5	9		4	1					28	28
Potts' Seedling ...		1	4	1	4				2			1		13	13
Ringer ...		2												2	2
Round Winter Nonesuch ...						1								1	1
Roundsway Magnum Bonum ...					1									1	1
Royal Codlin ...										1				1	1
Royal Jubilee ...					1	1								2	2
Rymer ...									1					1	1
Sandriugham ...			1	1		1								3	3
Schoolmaster ...				1							1			2	2
Scotch Bridget ...							1							1	1
Small's Admirable ...	3				1									4	4
Stirling Castle ...	7	8	3	1	12	8	2	4	1	3	1		2	52	52
Striped Beefing ...					1	3								4	4
The Bailie ...	1													1	1
The Queen ...			1	2	2	3		2						10	10
The Vicar (local at Shirley)						1								1	1
Tom Putt ...						2		2						4	4
Tower of Glamis ...	2		3		2	6	2	2	3		1		1	22	22
Waltham Abbey Seedling ...						2				1				3	3
Warcham Russet ...									1					1	1
Warner's King ...	11	11	8	4	24	23	1	16	7	1	2	1		109	109
Winter Greening (or French Crab)			1			1								2	2
Winter Hawthornden ...									2					2	2
Worcester Pearmain ...					1									1	1
Yorkshire Greening ...			1			1			1					3	3

New or Noteworthy Plants.

CRINUM × DIAMOND, SPRENGER.

C. ABYSSINICUM, Hochst. × *YEMENSE*, Schweinf.

This fine hybrid *Crinum* first flowered in my garden here on August 20 this year, and I wish

erect, about $2\frac{1}{2}$ feet long by 2 inches broad, narrowed gradually to the point, closely veined, with undulate, somewhat scabrous edges. Peduncle moderately compressed, 3 feet long, overtopping the leaves; green, with the lower part bright purple. Flowers ten to fifteen in an umbel;

This fine *Crinum* is snow-white, shaded outside with delicate rose-colour, and is sweet-scented. This hybrid seems to be the first raised from the rare *C. abyssinicum*, and will certainly become a favourite with amateurs and gardeners, as it flowers abundantly even in small pots, if well



FIG. 133.—APPLE LANE'S PRINCE ALBERT: HIGHEST ON LIST OF COOKING-APPLES
(SEE P. 298.)

to describe it immediately. It is a splendid plant, hardy here in Naples, and flowers the fourth year after sowing. Bulb not as large as that of the pollen-parent, oblong-ovoid, with a long neck. Leaves about ten or more to a bulb, large, linear, but broader than that of the seed-parent, and not glaucous, but bright green, sometimes tufted with brown, like that of the pollen-parent;

pedicels very short; spathe-valves yellowish-brown, veined, with many filaments, ovate-lanceolate, 3 inches long. Perianth-tube much curved, slender, 3 to $3\frac{1}{2}$ inches long; limb horizontal $2\frac{1}{2}$ to 3 inches long; segments oblong, acute, much connivent, $\frac{3}{4}$ inch broad, much recurved, acute, undulate; filaments much shorter. Style longer than the segments.

cultivated and manured. Its leaves are very decorative, and its flowers are beautiful and sweet.

I have so far obtained forty-eight fine hybrid *Crinums*, and I hope for many more from about fifty hardy species at Naples, collected from various parts of the world. Charles Sprenger, Naples.

BOOK NOTICE.

ROSES AND ROSE CULTURE. By William Paul, F.L.S., &c. (London: Simpkin, Marshall Hamilton, Kent & Co.)

The appearance of the tenth edition of this shilling handbook is sufficient testimony to its value. We need hardly repeat the opinions passed on previous editions as to the usefulness of the hints here given on soil and climate, Roses of different habits, pruning, propagating, gathering, &c. Lists of old and of new Roses are included, and selections of Roses suitable for various purposes; these catalogues being duly made up to date.

THE IRIS GARDEN. The Book of the Iris, being vol. xxi. of *Handbooks of Practical Gardening* By R. Irwin Lynch, A.L.S., &c., Curator of the University Botanic Gardens, Cambridge. (John Lane, The Bodley Head, London and New York. 1904. Price 2s. 6d. net.)

THE appearance of this handy and well-printed work of 214 pages, amply illustrated, reminds us of many beautiful things, and more especially of the almost Orchid-like magnificence of the Irises, many and varied, that we have seen luxuriant in gardens at home and abroad. The work is very appropriately dedicated to Sir Michael Foster, of Cambridge, whose labours in cultivating and hybridising the Iris is well known. Happy indeed are those privileged to visit the hill-top garden at Great Shelford when the *Oncocyclus* and other rare Irises are in bloom. This garden is situated on the chalk formation—a fact worth remembering whenever the cultivation of this section of the genus is attempted. It is scarcely possible to mention the *Oncocyclus* Irises without alluding to the great beauty and variety of the hybrid kinds raised by Sir M. Foster and by M. C. G. van Tubergen, of Haarlem. The latter has succeeded in obtaining a robust and comparatively easily-grown race by crossing *I. Korolkowi* in variety with *I. Susiana*, *I. iberica*, and other *Oncocyclus* kinds. The results were considered wonderful even by Iris experts who saw the flowers exhibited in the spring of the present year before the Royal Horticultural Society.

There are altogether considerably over a hundred species of Iris, and they yield a succession of flowers for at least nine months of the year. It is also an advantage that they differ so widely in their habit of growth and general character. There are, indeed, Irises for all sorts of soils and conditions, and they vary in height from a few inches to 6 feet or so. As we have seen, there are kinds that do best on warm and dry or chalky soils, while others, such as the swamp Iris of Japan (*I. laevigata*), do best in moist or even in wet and marshy places. Those who have seen this Iris beside the pond at Wisley, or elsewhere, will not need to be told of its beauty and variety. *I. sibirica* is another distinct and effective Iris for the marsh or water-side garden, and at Kew it does well along the margin of the lake and elsewhere in the grounds.

Amongst the most abundant, and perhaps the cheapest of all the Iris, are the bulbous kinds (*Xiphion*), commonly known as the English and Spanish Iris. They are well known, and great sheaves or armfuls of their flowers, as forced, appear in Covent Garden every spring. As they seed very freely, they vary infinitely, especially in colour; and their bulbs are extensively grown on the Continent for exportation every year. The Spanish Iris has been called "the poor man's Orchid," since, apart from its beauty, its bulbs are cheap and easy to grow in any ordinary garden soil. The most abundant of all the Iris family, however, is the ubiquitous and variable



FIG. 134.—APPLE WARNER'S KING: SECOND ON LIST OF COOKING-APPLES. (SEE P. 298.)

I. germanica (*Pogoniris*), which is found in nearly every garden, be it large or small. It is grown alike by peer and peasant, and its great purple flowers and evergreen leaves, or "flags," are seen every spring in both town and country.

To the same section as the (*Pogoniris*) the milk-white flowered *I. florentina* belongs, which is

one of the very few kinds of economic importance. It is extensively grown in Italy for its rhizomes, which when dried and ground yield the 'Orris' (=Iris) root powder of commerce. One great charm of the Iris is due to the fact that if its flower-stems and buds are cut and brought into the house just as they are fully grown or the first

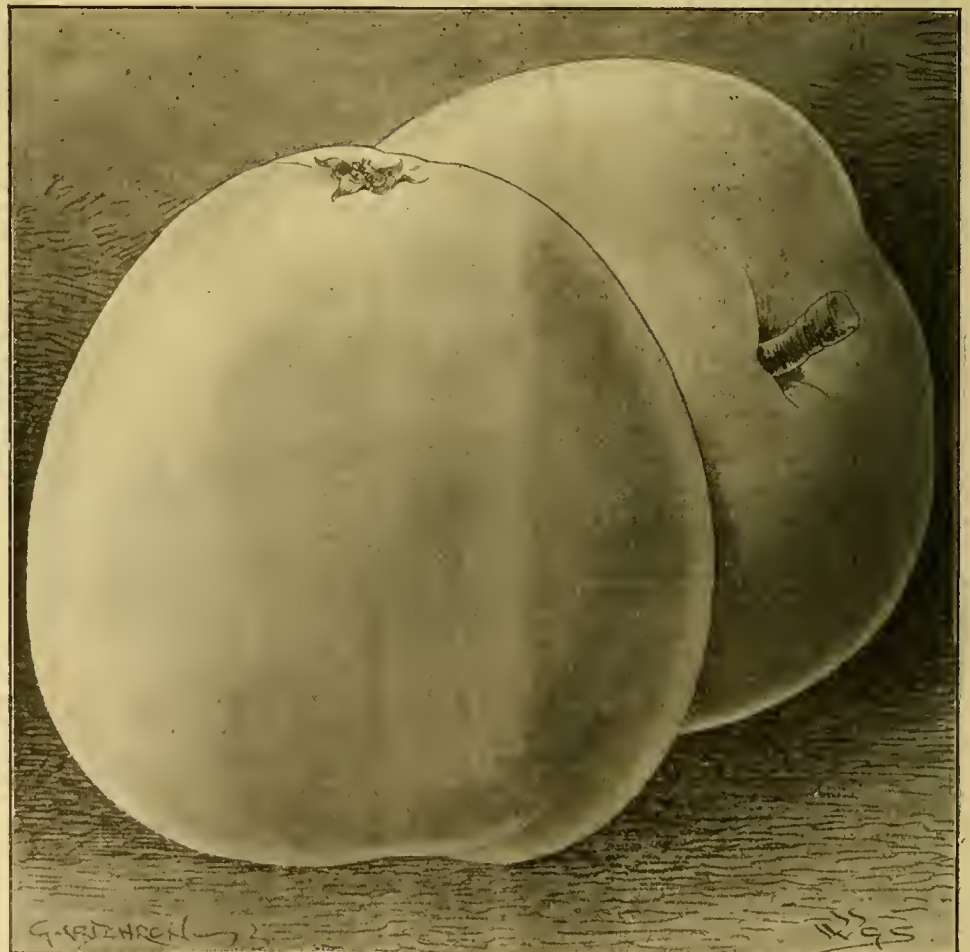


FIG. 135.—APPLE LORD SUFFIELD: THIRD ON LIST OF COOKING-APPLES. (SEE P. 298.)

flowers begin to open, they last fresh and beautiful in water longer than they do on the plants outside. Another point not generally known is that strong crowns of the German Iris and its allies may be potted in autumn and sheltered in a cold frame or greenhouse, where they will flower much earlier than those grown in the open-air.

A glance at the list of contents shows the scope and character of the work. Thus, under Part I. we find chapters on (i.) the structure and natural history of the flower; (ii.) the Iris garden, or selections of the most ornamental kinds; (iii.) the cultivation of *Oncoecylus* Irises, by the

ana), *Regelia* (ex. I. Korolkowi), *Pogoniris* (ex. I. germanica), *Xiphion* (ex. I. xiphion), *Juno* (ex. I. persica), *Gynandiris* (ex. I. sisyrinchium), *Hermodactylus* (ex. I. tuberosa), and *Nepalenses* (ex. I. nepalensis). By the use of this key and the classification tables it becomes quite easy to at once recognise the section to which any species belongs, while in like manner the species and their different essential characters are found described in detail under each sectional heading.

The work is well illustrated by thirty-six photographs and drawings, the former being mostly very clear and beautifully printed. There is also a good glossary of botanical terms, an index of

and compact than that of *B. nitida*, whilst its leaves are much larger. The leaf-stems of the specimen now in flower are from 9 to 15 inches in height; the alternate leaves have a petiole $1\frac{1}{2}$ inch long, the leaf-blade being 5 inches in length by 3 inches broad; dull, deep green on the surface, and brown-red on the reverse. The inflorescence is a terminal panicle containing from nine to twelve orange-yellow coloured flowers, each about $1\frac{1}{2}$ inch in length. This is much smaller than the individual flowers of *B. nitida*, but the plant is very robust, and of a very free-flowering habit, an 8-inch pan of these dwarf stems, each with its panicle of flowers, making a very pretty object indeed. Like *B. nitida*, it delights in plenty of heat and moisture and also a light potting compost. [It is not mentioned in *Schumann's Monograph of Zingiberaceæ*, nor in the last Supplement to the *Index Kewensis*, both just published. Ed.]

BURBIDGEA NITIDA

is also flowering in the Nepenthes-house, where it is planted in the border, and succeeds much better than when grown in pots. This species has leaf-stems which vary in height from 1 to 3 feet, and leaves 6 inches long by $1\frac{1}{2}$ inch broad; the panicles of large orange-scarlet flowers are very beautiful; each panicle contains usually about twelve flowers. W. H. [This plant is figured in *Botanical Magazine* (1879), t. 6403, and in the newly-published *Schumann's Monograph of Zingiberaceæ* (*Das Pflanzenreich*), 1904, p. 281, fig. 37. Ed.]

The Week's Work.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Asparagus-beds.—The growths of those plants which were prepared for forcing by being allowed to grow from the commencement of the season without being cut over, are on some soils turning yellow. Clear them away, and lightly prick over the surface of the beds with a fork, removing all weeds to the rubbish-heap. Then apply a mulch of short manure to that part of the bed containing the plants which will be taken up first, so that those plants, even in the event of severe frost, may be lifted when it is necessary they should be forced. At the same time I hold to my statement in a previous Calendar that Asparagus, like many other plants, will force better for having been exposed to a few sharp frosts before subjection to heat, and for that reason it will be best to leave the greater number of plants uncovered for the present. It is necessary however to make certain that when forcing commences there are always sufficient roots protected, so that there will be no break in the supply, owing to the impossibility of lifting further roots from soil that is frozen hard.

Permanent Beds.—Some of the growths on permanent beds where cutting ceased early are also becoming ripe, and ready for removal. When this has been done, clean over the beds and apply a top-dressing. This must be applied with discretion, especially if the garden is surrounded by game preserves, where cats and owls are destroyed, and the mice are allowed to increase to such an extent that they will eat all the crowns out of the Asparagus if means are not taken to prevent them. This has been the case on one occasion with us. Late in the autumn we applied a dressing of short stable-manure, rather more than sufficient to cover a mouse; under this they made their runs and feasted on the crowns during the winter, so that the beds were completely ruined. We now apply less at a time and often, rather than give the mice cover to work under. This has saved us from further disappointment. Beds containing seedling plants raised this year are yet green in some gardens, and should not be interfered with until they have finished their growth further than keeping them clear of weeds.



FIG. 136.—APPLE ECKLINVILLE SEEDLING: FOURTH ON LIST OF COOKING-APPLES. (SEE P. 298.)

late Rev. H. Ewbank; iv. indicates the cultivation of (a) Californian Irises; (b) of the Japanese Flag Iris, *I. laevigata*; (c) of *Oncoecylus* Irises, showing the views of the chief living authorities; (d) general remarks on cultivation. Chapter v. deals with the important subject of hybrids and hybridising, and Chapter vi. on diseases and insects that infest these flowers in one way or another. Part II. contains the classification and descriptions, with notes on cultivation under each species, and is a valuable bit of work.

First comes a key to the sections, after which the sections themselves and the species they embrace are described in detail. The sections are *Apogon* (ex. I. sibirica), *Pardanthopsis* (ex. I. verna), *Evansia* (ex. I. tectorum), *Pseudevansia* (ex. I. Kingiana), *Oncoecylus* (ex. I. Susi-

botanical and popular names, an index to Iris hybrids, and a good general index concludes a good book. We can cordially recommend Mr. Lynch's work to all who wish to cultivate and study the genus *Iris* in the garden.

KEW NOTES.

BURBIDGEA SCHIZOCHEILA.—This genus of the Order Scitamineæ has been represented in this country up to the present time by the one species, *B. nitida*, which was discovered in North-west Borneo by Mr. F. W. Burbidge in 1879; but after the lapse of twenty-five years, *B. schizocheila* has been added to the genus. It was sent to Kew in 1903 from the Java Botanical Gardens, and has been in flower in the stove for the past fortnight. The habit of the plant is more dwarf

Radishes.—Prepare ground for sowing Radishes on borders well exposed to the sun and sheltered from cutting winds, by applying a liberal dressing of half-decayed manure previous to digging the soil; this will keep the soil open and prevent frost penetrating so deeply.

Chicory.—A quantity of Chicory-roots may now be lifted and planted in boxes, which should be placed in some convenient position out-of-doors, they will then be ready when required for introducing into heat. Small batches only should be put into heat each time to blanch.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Late Peaches.—It is customary now to obtain an unbroken supply of Peaches from the end of April to the end of October. We have just exhausted the supply of fruits of "Sea Eagle" from the open walls. In late houses, where the leaves hang long, and retain their dark green colour nearly to the end, the indications are favourable for good crops next year, providing the wood is in a fruitful condition. It is only when trees are growing too grossly that unripened wood need be feared, and there need be very little "bud-dropping" in late houses and upon open walls if the trees are under good cultivation. The making of borders perfectly firm, and increasing their size by degrees, has much influence upon keeping the trees in a fruitful condition. We are now adding 1 more foot of whole turves to a 6 feet border in which the trees have been planted. Between every layer of turf some lime-rubble, charcoal, half-inch bones, and wood-ashes are freely added. The whole is made perfectly firm, and the angle of the border slightly falls towards the stems of the trees. Outside borders are constructed upon the same principle, and are kept fully open in front, exposing them to the sun's rays.

Grapes.—It will now be necessary to examine very frequently the bunches of Grapes in houses where fruit is still hanging. Much care is necessary when removing decayed berries in order to avoid causing blemish to other berries. Do not permit the soil of inside borders to become dry, or it will cause the fruit to shrivel. The water-pipes must not be made very hot, this being altogether unnecessary, as a temperature of 50° with top ventilation is sufficient. When it is considered necessary to afford water to the borders, choose a clear morning for the work, and open the ventilators, then employ a little extra fire-heat to dispel the damp before night. An indication of the favourable season that of 1904 has been for Vines, is afforded by the exceptional good finish of "Muscat of Alexandria."

Vines to be started in December.—The work of pruning should be completed. If the wood is stout and short-jointed, close pruning will be most satisfactory, the result of which will be compact, well-proportioned bunches, which are most serviceable. In cases where bunches are not produced so freely as is desired, which is generally caused by immature wood, allow one or two more buds to remain. Thoroughly cleanse the Vines and house, but do not remove more bark from the rods than is really necessary.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Roses.—If the soil on the surface of the beds has become light and contains much "humus" owing to repeated mulchings and top-dressings, this may be removed, taking care not to break any young roots. Then apply a good dusting of slaked lime, following this with a top-dressing of stiff loam with some bones added. No further mulching will be required during the winter. Press the soil firmly round the base of each plant with the foot if the soil is in a moderately dry condition. All leaves that fall from Roses that are subject to the Rust-fungus should be gathered up and burnt; do not bury them in the soil. Spray any such plants with one of the many anti-rust liquids before putting the beds in order for the winter; and if any are badly

attacked with mildew, dust these with flowers-of-sulphur. Leaves of all Roses should if possible be raked or otherwise taken off the beds as they fall, in order to get rid of grubs and other insects that deposit their eggs in the leaves. The trenching of ground for new beds and the renovating of old beds are among the work now in progress. If old plants have to be lifted from the ground, lay them in under a north wall. Cut the ends of the roots off cleanly as soon as they have been taken up, for at this time of the year they soon "callus" over, and they will need no pruning at the time of replanting. Those who intend to plant Roses next month will do well to make an early selection of varieties. The massing system is the best to produce effect, and for this purpose such varieties as Ulrich Brunner, Mrs. John Laing, Baroness Rothschild,

Wallflowers.—Apply a dusting of slacked lime occasionally over Wallflowers, as small white slugs are very prevalent just now. Wallflowers may require a good soaking of water to settle the soil around the roots after being planted.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Pleiones.—Plants of *P. lagenaria*, *P. maculata*, *P. concolor*, *P. præcox*, and *P. Wallichiana* that have matured their pseudo-bulbs and shed their leaves, may now be placed in a moderately dry position in the Cattleya-house to flower. If care be taken to prevent any water from settling on the buds or flowers they will last a long time in perfection, but if not kept free from moisture the



FIG. 137.—APPLE BRAMLEY'S SEEDLING: FIFTH ON LIST OF COOKING-APPLES.
(SEE P. 298.)

La France, *Prince Arthur*, *Prince Camille de Rohan*, *Margaret Dickson*, *Madame Lambard*, *Mrs. Sharman Crawford*, *Duke of Edinburgh*, and *Mrs. W. J. Grant*, are among the best.

Dahlias are still affording good flowers, and means should be taken to see that all are correctly labelled before frost destroys the blooms. Select the healthiest plants to provide growths for the making of cuttings for next season.

Tuberous Begonias.—Although these are still uninjured by frost the plants should not be left longer in the beds. Lift them carefully on a fine day, when the foliage is dry. Remove all the flowers, and place the plants in cutting boxes containing some leaf-mould. If the plants are treated well now they will pass better through the winter. As the foliage dies down, do not let it remain on the bulbs and soil, but clear it away.

Fibrous-rooted Begonias may be divided if the stock is insufficient, potting up the young shoots with a little root attached, and placing them in heat.

blooms will quickly damp off. *P. humilis* and *P. Hookeriana* have also completed their growth, and will flower in January or February. They should be kept in the cool-house, affording them sufficient water to prevent the bulbs from shrivelling.

Cypripediums.—In the coolest part of the intermediate-house such plants as *C. Spicerianum*, *C. Leeannum*, *C. Sallieri Hyeannum*, *C. Tityus*, *C. Euryades*, *C. insigne* and its varieties, are fast sending up their flowers, and in some cases the spikes will require to be guided up through the luxuriant foliage, or they may get weighted down with the leaves, and so grow distorted. Care must be taken when tying up the spikes of large specimens, where the growths are crowded, that the sticks do not injure the young growths or roots.

Cælogyne cristata and its varieties should now be encouraged to complete the new pseudo-bulbs. Afford them the lightest position in the house, and abundance of water until the flower-spikes appear.

Cymbidiums.—Strong plants of *C. Lowianum* and *C. Lowie-eburneum* that have made their growth and are showing their flower-spikes should be afforded plenty of water at the root; while those that are not yet showing for flower should be kept rather dry for several weeks, otherwise they will commence to grow, and the plants will fail to bloom this season. In either case keep the plants on the lightest side of the intermediate-house, with their foliage almost touching the roof-glass.

Sobralias.—Such terrestrial Orchids as *S. xantholeuca*, *S. Lowii*, *S. leucoxantha*, *S. Lucasiana*, *S. virginalis*, *S. albo-violacea*, *S. Veitchii*, *S. liliastrum*, *S. Warszewiczii*, *S. Lindenii*, *S. Ruckeri*, *S. macrantha* and its pure white variety *alba* (*Kienastiana*), are free growers, and succeed well in the intermediate-house. The young growths being well advanced, the present is a favourable time to repot pot-bound plants, or to

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Lifting and Pruning the Roots of Fruit-Trees.—Proceed with this work as quickly as possible, that it may be brought to a finish before the leaves fall from the trees. It matters not what kind of fruit-tree is under such treatment, the work should be done thoroughly, for if one large tap-root escapes notice it may be the means of rendering the whole work ineffective. It is better to lift bodily the roots of young Peach, Nectarine, or Pear trees, that are growing too strongly on walls, and when replanting them lay in the roots nearer to the surface of the ground. If, however, young trees have ample space for extending their shoots, and the wood is not too coarse, let them make more growth, and it will soon appear whether or not it is necessary to lift the roots. When the trees have made sufficient growth to balance that of the roots they may become fruit-

kept together, the trees can be attended to more conveniently, especially in the matter of affording protection in spring and when the fruits are ripe.

Pears.—In order to maintain a good succession of ripe fruits, it sometimes becomes necessary to hasten the ripening of some. When such is the case, select the most forward fruits and place them in single layers on some soft, sweet material in shallow boxes. Then cover the fruits with a sheet of cotton-wool or tissue-paper before placing the lid on; after which take the box and place it in a warm greenhouse, vinery, or some other warm structure. In this way the fruits will ripen several days in advance of those left in the fruit-room, and the flavour and colour will be excellent. For many years I have followed this practice when a gap has been likely to occur. The season of any one particular variety can be thus lengthened for several weeks.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Flowering Shrubs for Forcing.—Examine the stock of shrubs plunged in the reserve ground, and make a note of the number of plants sufficiently well provided with flower-buds to admit of their being profitably forced into flower. If it be necessary to purchase plants to make good a deficiency, the order should be sent off without delay. Shrubs can seldom be successfully forced two years in succession; therefore it is the practice when plunging those plants which have been forced during the winter to keep them separate from those forced in previous years. This prevents the risk of their being inadvertently used two years in succession. Where many flowering-shrubs are forced, it is always necessary to purchase a number each year, since however much care may be exercised, the forcing of the plants into flower at an unnatural season, the confinement of the roots in comparatively small pots, and the severe cutting to which the plants are generally subjected, is quite sufficient to account for a proportion of the plants each year becoming worn-out and useless for this purpose. The list of flowering shrubs which may be forced into flower in the winter is quite a long one. One of the latest additions is *Xanthoceras sorbifolia*, which was shown in perfection at a Royal Horticultural Society's meeting last winter by Messrs. Jas. Veitch & Sons. Other beautiful subjects which have become very popular during the last few winters are standard *Wistarias*, *Laburnums*, and *Cytisus*. In addition there are the wonderfully improved Ghent *Azaleas*, *Lilacs*, *Deutzias*, *Spiræas*, *Prunus*, *Staphylea*, *Hydrangea paniculata*, Japanese *Cherries*, and many others. The present is a suitable time to repot such plants as need it. If these are already occupying pots of as large a size as is desirable, the balls may be considerably reduced, and the plants returned to pots of the same size as the last. Peat, or peat and loam, should be afforded to those species which require it. Among these will be included *Rhododendrons*, Ghent *Azaleas*, *Kalmias*, *Andromedas*, and *Clethra alnifolia*. A suitable compost for *Lilacs*, &c., may consist of three parts loam and one part leaf-soil, together with a little well-rotted manure. After potting the plants plunge them to the rims in ashes or in the soil of the reserve ground.

Souvenir de la Matmaison Carnations.—The young plants raised from layers, and now growing in 3-inch pots, should be transferred to others 6 inches in diameter as soon as they have made sufficient roots. Want of room sometimes makes it necessary to defer placing the plants in their flowering-pots until after the new year, but the best results are obtained from autumn-potted plants only. A suitable compost may consist of three parts loam and one part flaky leaf-soil, together with a sprinkle of lime-rubble, and some silver sand. A 5-inch potful of soot, and a 6-inch potful of bone-meal may be added to each barrow-load of the compost. A light and well-ventilated house is the best place for the plants, but where this accommodation is not available they may be successfully wintered in a cool pit, or even in a cold frame, where they should be plunged to the rims of the pots in ashes.



FIG. 138.—APPLE DUMELOW'S SEEDLING: SIXTH ON LIST OF COOKING-APPLES. (SEE P. 298.)

divide large specimens. *Sobralias* have usually strong fleshy roots, and need a considerable amount of pot-room. Make the pots about one-third deep with drainage material, and use a compost of lumps of fibrous peat, rough sandy loam, and leaf-soil in equal parts, mixing with it a small quantity of sphagnum-moss and a moderate quantity of broken crocks. The compost should be well pressed around and between the roots, and a space of about half an inch left below the rim of the pot for affording water, a plentiful supply of which is needed when the plants have become properly re-established. It is a little too early to remove this season's flowering stems, but so soon as the plants are well rooted cut them down to the roots and tie out the young shoots clear of each other so that light and air may pass freely between them.

Odontoglossum citrosimum, which has been suspended in the Mexican-house during the summer months, and has not made sufficient progress in new growths, should be removed to a warmer atmosphere, keeping the plants well supplied with water at the roots until the new pseudo-bulbs are fully made up.

ful. Large trees in good health may be taken up and removed to other parts of the garden and replanted successfully if the work is done carefully. I have repeatedly shifted such trees, and in some instances without a particle of soil adhering to the roots, yet the trees have started naturally the following spring and made satisfactory growth in the first season following the operation. But it should be remembered that trees which have been treated thus require extra attention in dry weather. The surface of the ground should be mulched with short manure, the roots kept in a moist condition, and the trees sprayed occasionally overhead with water. Those intending to plant trees against walls should endeavour to keep the different kinds of fruit to themselves. Peaches should be given a south aspect. Plums a west or south-east aspect, and Pears a western one. Morello Cherries will succeed against a wall facing to the north or east; sweet Cherries should be planted against a wall facing to the south or west. In the warmer parts of the country the different aspects need not be studied so strictly as in the colder parts. If the different kinds be

APPOINTMENTS FOR NOVEMBER

TUESDAY, Nov. 1	Royal Horticultural Society's Committees meet.
	Brighton Chrysanthemum Show (2 days).
WEDNESDAY, Nov. 2	Bournemouth and District Chrysanthemum Show (2 days).
	Scottish Horticultural Association Meeting.
THURSDAY, Nov. 3	National Chrysanthemum Society's Show at Crystal Palace (3 days).
	Southampton Chrysanthemum Show (2 days).
FRIDAY, Nov. 4	Kent County Chrysanthemum Show (2 days).
	Highgate Chrysanthemum Exhibition (3 days).
SATURDAY, Nov. 5	Cardiff Chrysanthemum Show (2 days).
	Guernsey Horticultural and Agricultural Show.
SUNDAY, Nov. 6	Hanley Chrysanthemum Show (2 days).
	Linnean Society Meeting.
TUESDAY, Nov. 8	Torquay Chrysanthemum Show.
	Weybridge and District Horticultural Exhibition.
WEDNESDAY, Nov. 9	Battersea Chrysanthemum.
	Société Française d'Horticulture de Londres, Meeting.
THURSDAY, Nov. 10	German Gardeners' Club, Meeting.
	Batley Chrysanthemum Show.
FRIDAY, Nov. 11	Exhibition of Chrysanthemums and Plants at Ghent, Belgium (3 days).
	Rugby Chrysanthemum Show.
MONDAY, Nov. 14	Birmingham Chrysanthemum Show (3 days).
	Oxford Chrysanthemum Show.
TUESDAY, Nov. 15	Ulster Chrysanthemum Show, Belfast (2 days).
	Ipswich and East of England Chrysanthemum Show (2 days).
WEDNESDAY, Nov. 16	Dulwich Chrysanthemum Show (2 days).
	St. Neots Chrysanthemum Show.
THURSDAY, Nov. 17	Devizes Chrysanthemum Show.
	Royal Botanic Soc. Exhibition.
FRIDAY, Nov. 18	Gainsborough Chrysanthemum Show (2 days).
	Buxton and District Chrys. Sh. South Shields Chrysanthemum Show (2 days).
SATURDAY, Nov. 19	Ascot and District Chrysanthemum Exhibition (2 days).
	Putney and District Chrysanthemum Exhibition (2 days).
SUNDAY, Nov. 20	Colchester Chrysanthemum Show.
	Devon and Exeter Horticultural Exhibition, Exeter (2 days).
MONDAY, Nov. 21	Bradford Chrysanthemum Show (2 days).
	Shrewsbury Chrysanthemum Show.
TUESDAY, Nov. 22	Leicester Chrysanthemum Show (2 days).
	Stockport Chrysanthemum Show (2 days).
WEDNESDAY, Nov. 23	Sheffield Chrysanthemum Show (2 days).
	Nottingham and Notts Chrysanthemum Show (2 days).
THURSDAY, Nov. 24	Huddersfield Chrysanthemum Show (2 days).
	United Horticultural Benefit and Provident Society, Committee Meeting.
FRIDAY, Nov. 25	Royal Horticultural Society's Committees Meet.
	Hull Chrysanthemum Show (2 days).
SATURDAY, Nov. 26	Chester Paxton Chrysanthemum Show (2 days).
	Reading Chrysanthemum Show.
SUNDAY, Nov. 27	Liverpool Chrysanthemum Show (2 days).
	York Chrysanthemum Show (3 days).
MONDAY, Nov. 28	Norwich Chrysanthemum Show (3 days).
	Edinburgh Chrysanthemum Show (3 days).
TUESDAY, Nov. 29	Linnean Society Meeting.
	Barnsley Chrysanthemum Show (2 days).
WEDNESDAY, Nov. 30	Grimsby Chrysanthemum and Fruit Exhibition (2 days).
	Leeds Paxton Chrysanthemum Show (2 days).
THURSDAY, Nov. 1	Aberdeen Chrysanthemum Show (2 days).
	Bolton Chrysanthemum Show.
FRIDAY, Nov. 2	German Gardeners' Club, Meet.
	Bingley Chrysanthemum and Vegetable Exhibition.
SATURDAY, Nov. 3	Cheetham Hill and District Horticultural Exhibition.
	National Chrysanthemum Society, Committee Meeting at Essex Hall, Strand.
SUNDAY, Nov. 4	Royal Botanic Society, General Meeting.
	Royal Horticultural Society's Committees Meet.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY NEXT—
Twelfth Annual Sale of Fruit Trees, Nursery Stock, Potatoes, &c., at American Nurseries, Downham, Norfolk, by Protheroe & Morris, at 11.
TUESDAY NEXT—
Sale of Nursery Stock at The Nurseries, Richmond Road, Twickenham, by order of Mr. H. E. Fordham, by Protheroe & Morris, at 1.
WEDNESDAY NEXT—
Sixth Annual Sale of Nursery Stock at The Nursery, Shortlands, Kent, by order of Mr. J. B. Bryant, by Protheroe & Morris, at 11.—Azaleas, Palms, Plants, Araucarias, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.
THURSDAY and FRIDAY NEXT—
Sale of Nursery Stock at Cart House Lane Nursery, Woking, by order of Mr. R. Collyer, by Protheroe & Morris, at 12.
FRIDAY NEXT—
Orchids in large variety from various sources.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—45.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, October 26 (6 P.M.): Max. 58°; Min. 47°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 27 (10 A.M.): Bar., 30.3; Temp., 48°. Weather—Dull; foggy.

PROVINCES.—Wednesday, October 26 (6 P.M.): Max. 56°; South Coast of England; Min. 47°, North of Ireland.

HELICOPHYLLUM ALBERTI, Regel* (See Supplementary Illustration).—The curious Aroid depicted in the Supplement to this issue belongs to a genus that is seldom seen in gardens, and is not well known to gardeners. Closely resembling *Arum* in general appearance, *Helicophyllum* differs in minor particulars, such as in having no subulate processes above the anthers, and erect basal ovules. The genus is a small one, containing about nine or ten species, distributed from the Delta of the Nile through Asia Minor and Persia to Bokhara and Afghanistan.

H. Alberti is a tuberous-rooted perennial (as are all the other members of the genus), with 4–6 radical leaves of a bright deep-green colour, remarkable for the manner in which the divided basal lobes are twisted round and stand erect, a feature which is also characteristic of other species of this genus. The spathe is sessile among the leaves, convolute at the base, with a large, oblong, concave limb, cuspidate at the apex, rich blackish-purple in colour, with a velvety sheen. The long, protruding appendix is also blackish-purple. For the rest, Mr. WORTHINGTON SMITH's figure so well represents the plant that further description is unnecessary, beyond the remark that the segments of the leaves are sometimes very much narrower than in the specimen represented. This plant was discovered in Eastern Bokhara, and introduced into cultivation at St. Petersburg by Dr. ALBERT REGEL in 1883. Tubers were sent in 1884 to Kew, where it flowered in 1887. Other species that have been in cultivation are *H. Lehmanni* and *H. Kotschyi*. They flower between April and June, and require protection during the winter. *N. E. Brown*. [Our specimen was received from Mr. Van Tubergen of Haarlem.]

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday next, November 1, in the Royal Horticultural Hall, Vincent Square, Westminster. In the afternoon a paper will be read by the Hon. VICARY GIBBS on "Planting for Winter Effects," and it is hoped that those who can do so will make exhibits of plants bearing on the subject of the lecture.

LINNEAN SOCIETY.—The first meeting of the Society for the forthcoming session will be held on Thursday, November 3, at 8 P.M. The bye-laws amended in conformity with the Supple-

* *Helicophyllum Alberti*, Regel, *Descript., Plant. Nov.*, fasc. 9, p. 43. t. 9; *Botanical Magazine*, t. 696.

mental Charter will be submitted for confirmation by the Fellows at large. In view of the importance of this, it is hoped that Fellows will make a point of being present, and as there may be a large attendance it is suggested that no visitors be introduced. The papers to be read and exhibitions at the first meeting of the session 1904–1905 on Thursday, November 3, at 8 P.M., will be the following:—*Papers*: Mr. A. F. BROWN, "Notes on the 'Sudd' Formation of the Upper Nile." Mr. A. W. WATERS, F.L.S., "Bryozoa from near Cape Horn." *Exhibitions*: The President, A Note on some Points in the Structure of the Gill of the Ceylon Pearl Oyster. Mr. G. CLARIDGE DRUCE, F.L.S., A new British Grass.

DAS PFLANZENREICH.—The last number of *Das Pflanzenreich*, issued under the superintendence of Dr. ENGLER, contains a valuable monograph upon Zingiberaceæ, written by the late Dr. K. SCHUMANN. This excellent work deals with 38 genera, is illustrated with 52 figures, fills over 400 pages of clear type, and is accompanied by a full index. Many of the plants are of horticultural interest.

MARKETING PEACHES IN AMERICA.—In Georgia, South Carolina, Alabama, and Mississippi the Peach industry is increasing greatly, and every possible facility is offered by the southern railways for the conveyance of the crops to northern markets. *American Fruits* for October tells us how the Peaches are picked during the hot weather and packed, still warm, in boxes in refrigerator cars, which have been kept at as near the required temperature as possible. The trains are started as soon as they are loaded, and sent off at a very high rate of speed, even regular passenger-trains being shunted to allow them to pass. Thousands of pounds of ice are used in the refrigerators, and this melts rapidly, so that on arrival at Atlanta the cars have to be re-iced. The entire distance from Georgia to New York is so rapidly made that the Peaches are in the market at midnight on the third day from that on which they were gathered from the trees. They are carried across the river at New York in barges, and are in the retail houses by daylight. Peaches picked on Monday are on sale in New York at daylight on Thursday morning.

THE MALE PLANT OF THE HOP.—It would seem desirable that the presence of a male-flowered Hop should occasionally be permitted in a plantation, particularly where new seedling varieties are required. Such however is not the opinion of the Belgian Hop-growers, if we may judge from a notice affixed to the town-hall at Ypres. The notice goes on to say that it is *défendu* (it is astonishing what a number of things are *défendus* on the Continent) to preserve (*maintenir*) male plants of the Hop, or to plant them in the Hop-gardens. Landlords and tenants are bound to conform to this edict in all Hop-growing districts and for a space of 1 kilometre (five-eighths of a mile) around them.

BRITISH WEIGHTS AND MEASURES.—An association has been formed (25, Victoria Street, Westminster) to "combat the metre" and prevent the introduction of the metric system. We are not aware of any special virtue in the metre; what we do experience daily is the extreme inconvenience and waste of time occasioned by our present anarchical system of weights and measures. If system and regular proportion could be introduced, so that accurate statement, easy comparison, and definite relation to foreign measures could be obtained, we should not care whether it was "metric" or not.

ARUM CORSICUM.—Mr. SPRENGER sends us a specimen with one spathe enclosing a second; there is but one spadix. Such cases are not uncommon.

PHYSOSPERMUM COMMUTATUM IN BUCKS.

—At a meeting of the Ashmolean Natural History Society of Oxfordshire on Wednesday, October 19, the Treasurer, Mr. G. CLARIDGE DRUCE showed a specimen of *Physospermum commutatum*, which had recently been found by Mr. SHERRIN, of the British Museum, in a wood in Buckinghamshire, and which, after an examination of the locality, the Treasurer thought might be a native habitat. The plant hitherto has only been known in Britain from Devon and Cornwall.

ST. LOUIS EXHIBITION.—MESSRS. JAMES CARTER & Co. inform us that they have been awarded the Grand Prize for the best garden in the exhibition grounds at the St. Louis Exhibition.

—We are informed that Messrs. SUTTON & SONS, of Reading, have been awarded by the Jurors of the St. Louis Exhibition the Grand Prize for their collection of bulbous and annual flowering plants. This is the only "Grand Prize" awarded for flowers in the British Section. In addition, Messrs. SUTTON receive the only Gold Medal given in this section for grass seeds.

SOUTH-EASTERN AGRICULTURAL COLLEGE.

—The meeting of the Governors of the South-Eastern Agricultural College, Wye, was held at Westminster Palace Hotel on Monday afternoon, October 24, E. J. HALSEY, Esq., Chairman. The Principal's (Mr. M. J. R. DUNSTAN) report for the past session stated that 74 students had been in attendance, being an increase of 14 on the numbers of the previous year, whilst 84 students were entered for the session which commenced on September 26. The experimental report of the College will be shorn of much of its interest owing to the disastrous fire at the College farm, which however was fully covered with insurance. The Governors considered proposals for an increase in the College accommodation, and for the establishment of instruction in greenhouse management, and decided to further develop the Forestry Department, for which a grant will be sought from the Board of Agriculture.

THE SELBORNE SOCIETY.—MR. WILFRED MARK WEBB, F.L.S., who has been identified with the Nature-Study movement for the last five or six years, has accepted the Honorary Secretaryship of the Selborne Society. This flourishing Association has at present nearly 1,500 members scattered over the United Kingdom, and it is an interesting circumstance that at a general meeting held a short time ago the promotion of the study of natural history was made the first object of the Society. Influence is, however, still being exerted to preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare; to discourage the wearing of furs and feathers of creatures that are in danger of being exterminated; and to protect places and objects of natural beauty and antiquarian interest from ill-treatment or destruction. The office of the Society is at 20, Hanover Square, and all communications should be sent to the "Secretary of the Selborne Society" at that address.

MR. GURNEY IN AMERICA.—Our Chicago contemporary, *Gardening*, published, on September 1, a notice and portrait of Mr. JAMES GURNEY. Mr. GURNEY is a native of Buckinghamshire, and has had considerable experience in various English gardens, including Kew. Some years ago he settled in America, accepting a position with Mr. HENRY SHAW, whose grounds later on became the Missouri Botanical Gardens. This establishment Mr. GURNEY improved greatly, and on Tower Grove Park being given to the City of St. Louis by Mr. SHAW he was made Superintendent. Mr. GURNEY's hobby is the growing of aquatic plants, his *Nymphaea* "Frank Trelase" being much admired. Other fine hybrids also testify to Mr. GURNEY's skill and discernment.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

CARNATION "AMERICA" AND OTHER VARIETIES.—I agree with your correspondent "E. M.'s" remarks, which appeared on p. 267, regarding the Carnation "America." It is one of the easiest varieties to grow, and the flowers being produced on long, erect stems, their value when cut is enhanced. As a companion to "America," I can recommend "Glacier," a beautiful white variety, and a robust grower. "Miss M. Godfrey" is also a good white variety, and "Reginald Godfrey," as a pink variety for autumn flowering, it would be hard to excel. "Mrs. T. W. Lawson" also does well with me, producing splendid blooms when disbudbed freely. In regard to the variety "Mrs. L. de Rothschild," of which one hears so much, I cannot say it has been as satisfactory here as I should like it to be. J. Murray, Sopley.

THE LOQUAT (ERIOBOTRYA JAPONICA).—I am sending you a spike of flowers cut from a plant about 6 feet high, growing as a bush in Captain Ingham's garden, Bath. It is in the open garden, on sloping ground facing south, but fully exposed to all winds. The plant was raised from seed sent from the Riviera twenty years ago; it was then planted in the position it now occupies, and it is in perfect health. There are many specimens of Loquat growing in various positions in this neighbourhood, mostly as wall plants, but I cannot hear of any previous instance of its having flowered out-of-doors. The flowers are whitish-green, and possess an agreeable Hawthorn-like perfume. Canon Ellacombe, whose garden is only 6 miles from here, has a very healthy plant, which has been growing against a south wall for many years. The Canon informed me he had not heard of the species having flowered anywhere near here before. The Loquat is well worthy a place on a warm wall on account of its large deep green evergreen leaves, which are appreciated during the winter months. J. Milburn, Superintendent, Royal Victoria Park, Bath, Oct. 17.

CALLICOMA SERRATIFOLIA.—The second number of the Paris *Revue Horticole* for October contains an excellent coloured plate of this beautiful half-hardy flowering shrub, which is a native of New South Wales, and was introduced to European gardens at the commencement of last century. It is well figured in the ninth volume of Andrews' *Botanists' Repository* on plate 566, which was published in 1809. In appearance the flowers may be roughly described as resembling those of the well-known *Buddleia globosa*, but of a much paler colour approaching to white. This plant is also figured in two other works, namely, *Botanical Magazine*, vol. 43, plate 1811; and in Loddiges' *Botanical Cabinet*, vol. 12, plate 1167; but the colour of the flowers varies somewhat in each of these portraits. In the first-named they are shown to be pure white with golden-tipped anthers; in the second, pale yellow; and in the third, altogether white. The colour shown in the plate in *Revue Horticole* more closely resembles that of the plate in the *Botanical Magazine* than either of the others referred to. It was prepared from a drawing made from flowers produced from a tree growing in the garden of the well-known French nurserymen, Messrs. Nabonnand Frères, at Golfe Juan, near Cannes, who are now propagating it, and hope to be able to send out rooted layers of it in the spring of next year, as it is rather difficult to get cuttings of it to strike. In most parts of this kingdom it will doubtless require the protection of a cold greenhouse during the winter, but it may prove hardy in the milder counties of Devon and Cornwall and in the Isle of Wight. It is, at all events, well worth a trial by all lovers of beautiful shrubs living in these favoured localities. W. E. Gumbleton.

THE SHOWS AT THE NEW HALL.—Leaving the Horticultural Hall after the work of loading up outside had begun on the 18th, I heard great complaints on the part of the men engaged in the work, because being limited to one outlet they had to place their vans very wide, and hence had to carry their plants a long way. Certainly in respect of carrying plants in or out the Hall the

existing facilities, with far more space to fill and necessarily far more material to be employed, are much inferior to those at the old Drill Hall. I hope that in erecting the Hall facilities in such matters were not regarded as of trifling consideration. To provide the desired accommodation the Council should endeavour on show days to rent the adjoining enclosed playground, making the present entrance to it 4 feet wider. Then have a broad exit opened on to that playground from the side of the Hall facing it, and having inner and outer doors that would at other times close up securely. The yard might be utilised for storing the vans during the day, and thus supplying what is, in relation to fortnightly flower-shows, a great want. When it is remembered that the exhibits at such really splendid shows as was that of the 18th inst. are contributed quite gratuitously, it is evident that everything possible should be done to make things easy for exhibitors. I observed also when the exhibits at the show were being removed, that water which had been freely used in vases for flowers was so slopped on the wood floor that it laid in great puddles. Certainly such wanton spilling of water should not be permitted. Not only must such wetting seriously injure the wood-block floor, possibly causing it to swell and buckle, but the saturation must make cleaning difficult and expensive, and make drying prolonged. A Fellow.

MECONOPSIS GRANDIS.—You state in your interesting notes on the *Meconopsis* genus that the fine perennial species *M. grandis* has not yet been introduced. I am happy to be able to inform you that not only has it been introduced, but that it has bloomed both last summer and this in Mr. A. K. Bulley's garden at Ness, Neston, Cheshire. He is in hopes that it will ripen seed this year. It is one of the three members of this fine genus that are perennial, the others being *M. cambrica*, and the fine, but, alas, impossible *M. bella*. W. E. Gumbleton.

BLENNHEIM ORANGE APPLE.—Mr. Gamlin, of the South Devon Inn, Dawlish, has just picked from a pyramidal tree a fruit of Blenheim Orange Apple which turns the scale at 22½ oz. It is a handsome typical fruit. He has also some fine specimens of Peasgood's Nonsuch. Is not this nearly a record weight for Blenheim Orange? A. H. [A fruit weighing 22½ oz. was exhibited by the Earl of Verulam on September 17, 1822, and recorded in the *Horticultural Society's Journal*, Ed.]

DRACÆNA VICTORIA.—I have read with interest Mr. H. W. Ward's notes on *Dracæna Victoria*, p. 242, and can endorse all he says about its being a grand variety, but I have been struggling for the past two years to grow it, and without success. There are dozens in the country who could tell the same tale. Almost from their smallest stages the leaves show light markings which slowly but surely turn brown and leave the plant anything but attractive. I have seen many plants of *Dracæna Victoria* this year, including those shown for Messrs. Bull's "Cup" at Shrewsbury, but not one was free from these marks. I have grown it in a house with stove plants that required no syringing overhead, and in a *Codiaeum* (Croton) stove where the conditions were reversed. I have tried light and shade, but the results are the same. Will any other growers give their experience of this variety? Mr. H. W. Ward seems to consider that this variety may be increased as easily as the average *Dracæna*. But I am informed that when topped the old stock not unfrequently dies right back. Adam Knight, Brayton Gardens, Carlisle.

TULIP "SIR THOMAS LIPTON."—To those who are on the look-out for a good Tulip I would recommend this variety. The flowers are of bright satiny-scarlet colour and become very brilliant in sunshine. We had a circular bed filled last spring with this variety, and it proved one of the best and most conspicuous of all, and more lasting even than that popular bedding Tulip "Kaiserskroon." "Buster Brown," Talygarn.

WARTY DISEASE OF POTATOS.—The cause of the disease referred to at p. 264, *ante*, has been attributed to *Edomyces leproides* as well as to *Chrysophlyctis endobiotica*. The names are worthy adjuncts to the leprous disease itself, and mycologists are disputing for priority. Last spring a

Potato was sent to me entirely covered with this disease, so that even the eyes were obliterated. I cut it in two, and planted the two pieces in isolated positions, with the result that two perfectly healthy plants appeared. The crop was a heavy one, and every tuber was perfectly sound. *W. G. S.*

POTATOS.—Calling recently upon Mr. Robert Pinchbeck, Belmont Nursery, Knaresboro', Yorks. I had the pleasure of seeing two batches of Potatoes which had just been lifted. Of "Evergood," 1 lb. of sets yielded 115½ lb. net., including 2½ lb. small ones; one tuber weighing 1¼ lb., twelve tubers 11 lb. 2 oz. with no signs of disease. Of "Northern Star," 1 lb. of sets yielded 157½ lb. net., including 6¼ lb. small; one tuber weighing 1 lb. 2 oz.; seven tubers 5½ lb.; six tubers slightly diseased. No artificial manure was used. *Chas. E. Carr.*

QUICK GROWTH OF MELONS.—Replying to "Surrey's" enquiries, I may say that the soil consisted of a rather heavy loam procured from an old pasture overlying chalk, but it was not cut in the usual way and stacked. We had only the old rough patches cut from here and there (which the stock would not eat), and this was stacked for some time. In preparing the bed we mixed a portion of burnt refuse with the loam, and during the process the soil was made firm, a necessary detail in order to obtain short-jointed growths. The bottom heat, from a flow-and-return hot-water pipe under the bed supported by slates, ranged from 70° to 75°, while the atmospheric temperature was never allowed to fall below 70°, but frequently on mild nights rose to 75°. The temperature by day of course fluctuated and was influenced by the conditions of the weather. With sun-heat it would reach to 85° to 90°; and at closing time in the afternoon, when the foliage, bed, walls and path were thoroughly syringed, the temperature would run up to 100° and even 120°. The seeds were sown in "60" sized pots, and the plants were removed from these pots to their fruiting quarters, planting them at 2 feet apart. Each plant was permitted to carry three to four fruits; more fruits could be left on the plants as I find no difficulty in securing a "set" and unlike some growers I do not wait until sufficient female flowers show at one time before pollinating them, but secure each flower as it opens. By these means I experience no difficulty in securing a crop, and frequently remove several fruits from each plant, as large size is the chief consideration. After a "set" has been secured, a good top-dressing is given the bed, and a plentiful supply of liquid manure-water and artificial manures. I differ somewhat from the practice followed by some growers, for as the fruits advance towards ripening they gradually give the plants less water, and in some cases none at all. This practice is followed with the idea that the drying of the plants increases the flavour of the fruits. I maintain that this is quite wrong, and believe that in order to secure the best flavour it is necessary to keep the foliage healthy and clean up to the time the crop is secured. In the same house I have the third crop of Melons now ripe. The seed for the first crop was sown in the first week in January, and I hope to clear off the last crop by the last day of this month; this will show that there is little waste of time. *W. H. Clarke, Aslow Rowant Gardens, Oron.*

CHRYSANTHEMUM SPORTS.—The reasons for a plant producing sports are difficult to understand. A week or two since I observed in a trade paper an enquiry from a market grower respecting the reason why nearly one-half of his stock of the Golden Yellow Horace Martin (a sport from Marie Masse) had produced pink flowers? The season previous his stock of several hundred plants was quite true. He planted this season 2,000 with the above result. A large number of growers will be sadly disappointed over the sport of Mrs. Barkley sent out as "Lady Cranston." The white-flowered sport appeared in 1902, and the stock last season was eight plants all true to the sport. The form of the flowers was entirely changed, and they were pure white or prettily but slightly flushed on the crown (not the centre) with clear rose-pink. It was certificated by the National Chrysanthemum Society and the Royal Horticultural Society's Floral Committees, and also awarded the Silver Medal by the Scottish

Horticultural Society, as the best novelty. All who saw the blooms were charmed with them, and there was a keen competition for the stock. But, alas and alack! the whole stock seems to have reverted to the original "Mrs. Barkley," for out of my stock of about 100 very fine plants not a white flower has appeared, and other growers complain of the same thing. It is much to be regretted. *W. J. Godfrey.*

A RECORD POTATO CROP!—The following communication, part of a letter just to hand from Messrs. Graham, Selham & Co., Unltd., The Tuberies, will interest Potato fanciers:—"We are pleased to inform you that our new Potato, 'The Munchausen,' is surpassing all anticipations. From a single seedling plant sown in 1903, we have just harvested 300 tons. This was effected by express propagation under glass with the use of the electric-light and a liberal employment of suitable stimulants—a plasmon biscuit and a tablespoonful of Brand's beef-essence twice daily to each plant. We were thus enabled to strike the tops three times a week for several months before planting out. The crop when lifted filled a 10-acre field so solidly that the first root could be moved only by the aid ofallets and wedges. The Poet Laureate and Mr. Carnegie were invited to witness the lifting of the crop. The remarkable advance made in this variety is that the tough, woody fibre of the stem, so requisite in disease-resisting Potatoes, is extended into the tubers, rendering them disease and frost-proof, and even capable of resisting the action of boiling water. The table qualities of this Potato are altogether exceptional; but our partner who undertakes the experiments in this direction has been unavoidably absent since making personal trial of 'The Munchausen' some days ago. His report will follow. In view of the certain demand, immediate application is advised for quotation per ounce for delivery in 1910." *G. H. Engleheart.*

THE NATIONAL POTATO SOCIETY.—At most of the smaller shows in the West of England it is a rule to require in each exhibit of Potatoes "half to be boiled," but I fancy the judges rarely trouble to taste them; if the Potatoes "look" all right that seems to be sufficient. I am afraid the present generation will require a deal of educating before they will appreciate the "qualities" of yellow-fleshed Potatoes, which, to the majority of people, are detestable. The present-day cook will not use yellow-fleshed Potatoes, and that compels the gardener, no matter what his own taste may be, to supply her with white Potatoes. *A. C. E.*

CUNNINGHAMIA SINENSIS.—In the interesting account of Tittenhurst, mention is made on p. 284 of "Cunninghamia sinensis, over 20 feet in height, and with spreading, feathery branches, as probably the finest tree of its kind in the open-air in England." The italics are mine. Instances of fine specimens of this somewhat tender Conifer are rather rare, and this tree does not find a place in the "List of Conifers and Largest Specimens" at the end of the Royal Horticultural Society's Report of the Conifer Conference. The finest specimen I have ever seen is that growing at Pencarrow, North Cornwall, which is now 47 feet 6 inches in height, and measures 4 feet 9 inches in girth at 5 feet from the ground. Like the Tittenhurst tree, the example under notice is well-branched and symmetrical. This tree was planted in 1850 by Sir Wm. Molesworth, the first Secretary of State for the Colonies, who, like the late holder of that office, loved to devote much of his leisure to his gardens. I believe there is a Cunninghamia at Bicton even taller than the Pencarrow tree, but if my memory serves me right it is thin in habit, having been "drawn up" amongst quicker-growing deciduous trees. To succeed with this beautiful Conifer it must be afforded perfect shelter from all rough winds; and I am of the opinion that it thrives best when planted on sloping ground where the soil is not cold and wet in winter, but requires plenty of moisture during the growing season. At this time of the year the Cunninghamia sheds its three-year-old foliage, which has become intensely red in colour. These feathery sprays are effective when used for dinner-table decorations. *A. C. Bartlett.*

COLOUR IN APPLES.—It seems to me that "A. D." is partly right but partly wrong in what he asserts about the dissociation of colour from quality in Apples (p. 275). It is perfectly true that some of the most brilliantly-coloured varieties, which capture the market by their appearance, are poor in flavour. But "A. D." will find few growers to agree with his opinion that such Apples as Cox's Orange Pippin, Blenheim Orange, Gascoyne's Scarlet, &c., are worse flavoured when highly coloured. It is not likely that this should be true, for colour means sun, and sun means sugar, and sugar and perfect flavour are linked together. "A. D." will scarcely maintain that a sour Cox's Orange is as well flavoured as a sweet one. From a young orchard with full southern exposure I have some wonderfully-coloured fruits of Cox's Orange Pippin this year, and when I want an Apple to eat I always pick out the ruddiest, and my palate has never found fault with the choice. The old epicure who bit out the sunny, i.e., the coloured side of his Peaches, and rejected the rest knew quite well what he was about. *G. H. Engleheart.*

—"A. D.'s" remarks as regards highly-coloured Apples for market were not borne out in a conversation I heard on Friday last while on business in a town on the East Kent coast. A shopkeeper was offered some fruits of Emperor Alexander Apple by a local grower; they were a splendid sample, especially in colour, but the person referred to declined them, saying "they were too highly coloured; customers said they were foreign ones," adding that Worcester Pearmain and other coloured sorts would not sell now; also that she had a gallon returned a few days previous on that account. Why people in Kent fail to appreciate a well-coloured Apple I am at a loss to know. They see, and can procure locally, the finest produce of the United Kingdom, and yet they are afraid of the foreigner. I think "A. D." has been ably replied to by Mr. Mayne and the head of the well-known Kent firm of pomologists; and what they say with regard to Lady Sudeley I can fully endorse in every respect from fruits I have seen grown as far down as Gloucestershire. *H. Locke.*

—In the concluding paragraph of my note on colour in Apples, on p. 290, owing to a misprint it reads, "These culinary Apples," &c., instead of "coloury." *Geo. Bunyard.*

—In spite of the heavy batteries of artillery arrayed against me from Kent and Devon, I still stick to my guns. How was it that when Messrs. Veitch & Sons had for two seasons their competitions for flavour in Apples at the Drill Hall, not a single high-coloured variety obtained a prize? There is a wide dissimilarity between my estimate of what colour is and that held by Mr. G. Bunyard, as I should never dream of including Adams' Pearmain, Claygate Pearmain, Margil, Egremont Russet, Cockle's Pippin, Allen's Everlasting, Ribston Pippin, Cox's Orange Pippin, Sturmer Pippin, and many others of excellent quality he mentions, amongst "coloured" Apples. The colour they put on is as the smile of the warm sun reflected, and bears no comparison to the heavy coat of vermillion-red seen on Duchess' Favourite, Worcester Pearmain, Baumann's Red Reinette, Colonel Vaughan, and others that I need not name. I would ask any impartial person whether fruits of this heavy-coloured description do for one moment bear comparison with the flavour found in Cox's Orange, Ribston, Sturmer, or Cockle's Pippins; or with the brown St. Edmunds and Egremont Russets? We want a clear conception of what is meant by colour, and what is meant by flavour. Mr. Engleheart, in a diatribe against the newly-formed National Potato Society, from which he expects so much before it has had time to feel its feet, declares that the yellow-fleshed Ashleaf Kidney to have of Potatoes the best flavour. He is correct, and there sets up a standard of flavour in Potatoes. In the same way I set up Cox's Orange Pippin, with its yellow-tinted flesh, as the highest flavoured of all Apples; and I ask, Is there a single rich-coloured variety that can be in that respect compared with it? Mr. Mayne not very logically thinks that were Cox's Orange

Pippin competing with Lady Sudeley in August the latter would win; but who in his senses would think of so exhibiting the former in August when it is not ripe till October? From off the Middlesex clay King of the Pippins is a capital, crisp, juicy, and nice-flavoured Apple. It may be the reverse at Bicton. It is amusing to

CYPRIPEDIUM × FRED. K. SANDER.

Our illustration (fig. 139) represents the handsome giant among *C. bellatulum* hybrids, for which Messrs. Sander & Sons, St. Albans, received a First-class Certificate at the Royal Horticultural Society, October 18, and which was

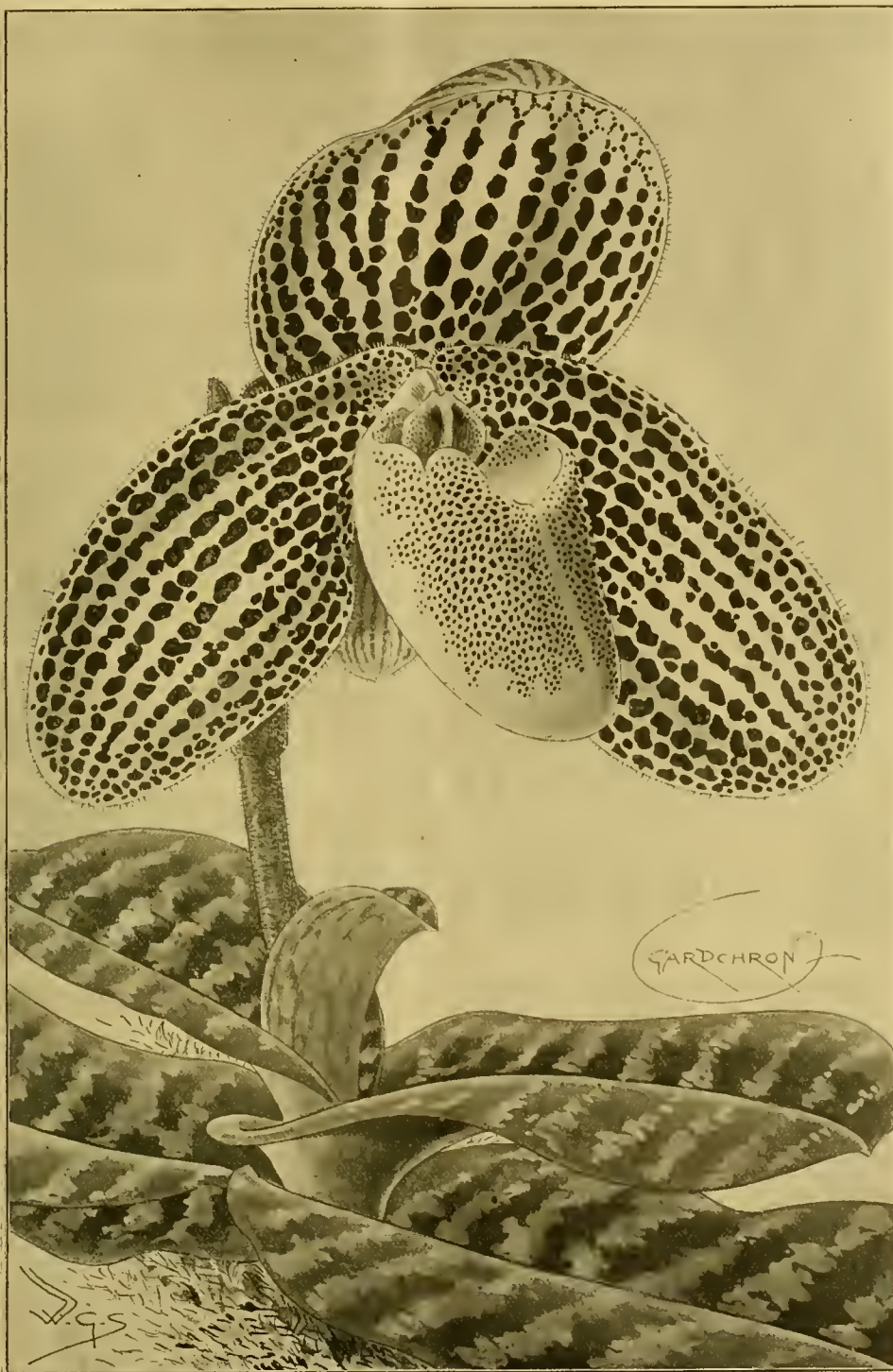


FIG. 139.—CYPRIPEDIUM F. K. SANDER: FLOWER WAXY-WHITE WITH PURPLE SPOTS.
(Real Size.)

read of Peasgood's Nonesuch as a dessert Apple. In the same category comes huge, watery Pitmaston Duchess as a dessert Pear. How is it that with Pears the highest-coloured *Beurré Clairgeau*, *Durondeau*, *Trouts*, and others are, in spite of their beauty, so inferior, whilst greenish or russety Pears have the best flavour? A season at the table of the Fruit Committee, as an absolutely impartial member, helps to dispel many illusions as to flavour in fruits. A. D.

duly described in the *Gardeners' Chronicle* October 22 last. The extraordinary good results in this case prove the desirability of second crossings. *C. × Annie Measures* is the result of crossing *C. bellatulum* and *C. Dayanum*, and the second crossing with *C. bellatulum* has developed unexpected size and beauty. The like will probably take place in other second crossings. The flower, which is wax-like in substance, is spotted with dark-purple.

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 18.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair); Drs. Cooke and Russell, F.R.S.; Messrs. Odell, Chittenden, Bowles, Saunders, and Holmes; Revs. W. Wilks and G. Henslow, Hon. Sees.

Bulbophyllum Waddellii.—Mr. Odell showed a spray of this Orchid, remarkable for the oscillating character of the labellum.

Dahlia virescent.—Mr. Saunders showed some malformed flowers from a cottage garden, upon which Dr. Masters will report.

Echium, Dye from.—Dr. Plowright sent specimens and the following communication: For some years past I have been endeavouring to obtain specimens of *Lithospermum arvense*, in order to test its colouring properties; but I have neither been able myself to meet with specimens, nor have I been able to obtain any from my friends. At the suggestion of Mr. E. M. Holmes, I examined the roots of *Cynoglossum officinale* and *Echium vulgare*. In the first named I failed to detect any colour; but in the last named certain specimens contain alkanin in appreciable quantities. As is well known, *Echium vulgare* favours sandy (or limestone) soils, and it is often a brilliant ornament to our sandy lanes and barren places on heaths, &c. At times it strays into cultivated light land. I have examined specimens from five localities near King's Lynn, in three of which the *Echium* roots were devoid of red colour, excepting, perhaps, the barest trace. In the other two the colour was developed in more or less extended patches on the main and secondary roots. The age of the plant does not seem to have much effect upon its production; but, if anything, it is more abundant in the biennial plant. The two localities which produced it in greatest quantity had this in common. They were both almost pure sand, but received the washings from the main road made of imported granite. In fields, whether manured or not, and in ordinary sandy habitats, the roots were devoid of colour. So were specimens growing on roadsides where any flint was employed as road metal. The probable explanation is that the disintegration of the granite yields an appreciable amount of potash. The alkanin is confined to the cortex. It is deposited in the cell walls in a more or less patchy manner. By treatment with caustic potash the red cells are changed to bright blue. The coloured parts of the roots were treated with spirit of wine and oil of turpentine, both of which dissolved out the alkanin. Fragments of root were treated with white wax, with white hard paraffin, and with lard, to all of which the red colour was yielded. A disc covered with the alkane of commerce is also sent. My friend, Rev. H. E. Bishop, of Middleton Vicarage, near King's Lynn, has been successful in growing the true *Anchusa (Alkanna) tinctoria* in his rockwork garden. He has kindly supplied a specimen, from the root of which the accompanying specimen of lard was coloured pink, as well as a disc of white wax. The living plant and its flower were also sent. The red colour of the root is very marked. It contains much larger quantities of the colouring matter, of course, than does the *Echium*.

Corticium Chrysanthemi, n. sp. Dr. PLOWRIGHT also sent the following description of a new fungus, upon which Dr. Cooke will also report: "Effused, incrusting indeterminate, milk-white, with a filamentous substratum; spores oval, with a large nucleus, 5 to 8 by 3 to 5 m.k. Parasitic on bases of the stems and roots of the cultivated *Chrysanthemum*, in gardens, King's Lynn. This species, which I have known for many years, is the common cause of death in old *Chrysanthemum* plants. It is closely allied to *Corticium sambuci*, but differs in its habit in being confined to the ground-line and just below it of its host. It extends both upwards and downwards for an inch or two, and mats together the affected stems and surrounding earth. It eventually causes the death of the plants it attacks."

Fruit-fly Parasite, Discovery of.—Mr. A. SANDERSON, Chislehurst, sent an interesting account of Mr. G. Cowpere's discovery in Brazil of the parasite of the fruit-fly, well known as a devastator of orchards in South Africa, Jamaica, Bermudas, Italy, Spain, and Southern France, as well as Malta. After two years' travel, of search with no success, he finally discovered it in São Paulo, and succeeded in conveying it alive, by rendering it torpid by the refrigerator, to Australia.

A difficulty arose in the seasons of Brazil and Australia not coinciding, so that Mr. Cowpere is feeding them artificially till the fruit season comes round. He found several other parasites, as of the black-scale, which has revolutionised the treatment of the pest in California, where its success has convinced even the most sceptical. Mr. Cowpere secured a second parasite of the black scale in Brazil. He discovered also the Codlin-moth parasite in Europe.

Plant Bug.—Mr. SAUNDERS reports as follows upon specimens sent by Miss COPE:—"The insect attacking the plants is one of the plant bugs (*Lygus pabulinus*), a common insect on various plants. The members of the bug family, unlike many other insects, when they emerge from the egg very much resemble their parents in general appearance, though of course they are much smaller; and this similarity increases as the insect grows, so that it is never in a dormant state, as other insects are when they become chrysalides. This is one reason why these insects are difficult to destroy. Many, however, might be killed by shaking the plants they are infesting over freshly tarred or painted boards or sheets of card or metal. Others might be destroyed by spraying the plants thoroughly with a solution of paraffin emulsion, or some other insecticide containing soft-soap. In the case of a plant growing against a wall it might be possible to so fasten up a tarpaulin or some thick canvas that the plant might be fumigated. I cannot suggest any other methods of destroying these insects."

Trichosanthes, Tendrils of.—Mr. ODELL showed specimens of *T. anguina* and *T. cucumerina*, the tendrils of which (resembling those of the Bryony) had adhered by adhesive pads to a flat wall in a similar way to Virginia Creeper. The usual method of climbing is to twist round some slender support.

Nerine sarniensis from Japan.—Mr. WORSLEY drew attention to the fact that he had received bulbs with other plants presumably from Japan, and that both Kämpfer and Thunberg in 1795 recorded it as a native (*Botanical Magazine*, t. 294). It is said to be common at Nagasaki, and the question arose whether it had not reached Japan from the Cape, or whether those early botanists had confounded it with *Lycoris*.

Herbertia pilchella, droppers.—Mr. WORSLEY also showed specimens of bulbs of this plant with long brown scales, within which the bulb had grown downwards some inch or two, but without the aid of contractile roots.

Woods, Photos of.—Dr. RUSSELL showed several remarkable photographs of sections of woods, taken by the action of the wood itself on a photographic plate in the dark. The spring (active) and the autumn wood (inactive) appeared as black and white concentric circles. The action is due to the presence of resinous matter, which gives rise to peroxide of hydrogen. In the autumn woods resin is present but cannot escape. It is remarkable that in the Larch, Cedar, and Deodar, the action of the spring and autumn layers is reversed. (See *Proceedings of the Royal Society*, vol. 74.)

EPHING FUNGUS FORAY.

OCTOBER 15.—The annual Fungus Foray of the Essex Field Club was held on the above date in Epping Forest, with its headquarters at the King's Oak, Highbee. The day was fine and dry, but the company was rather smaller than usual, and the President for the day was R. Meldola, Esq., who was here, there, and everywhere, welcoming the members and visitors. The conductors and experts on this occasion were Dr. M. C. Cooke, Mr. George Massee, from Kew, and Mr. A. Clarke of the Yorkshire Naturalists Union from Huddersfield.

A short excursion had been made on the previous Thursday, and the specimens collected had been sent to the exhibition room, together with those collected during the early part of the day on Saturday, so that the examination and determination could be proceeded with at once. The ground in the forest was very dry, and cracking in many places, so that the crop of fungi was unusually small, also considerably reduced by the cold dry winds and recent frosty nights. Notwithstanding all the drawbacks no fewer than 100 species were determined as the result of the foray, and amongst these were several species of special interest. Of the latter may be mentioned a young specimen, about 5 inches in diameter, of *Hydnum erinaceum*, bristling all over with slender spines like a hedgehog, and which had not been seen in the forest during the last twenty years. One notable feature of this meeting was the entire absence of many species which have been seen on the tables year by year on previous occasions.

The common Hedgehog Mushroom, *Hydnum repandum*, often found plentifully in the forest, was not

represented by a single specimen, neither was there a solitary example of either the common Mushroom or the Horse Mushroom. In fact, edible species, including the Chantarelle, the Shaggy Caps (*Coprinus*), the Parasol Mushroom, and many others usually seen on the tables, were almost wholly absent.

Notwithstanding all drawbacks, it was found, upon a close and critical examination, that about twelve species were determined, which had not been recognised before within the limits of the county, and some were evidently found in Britain for the first time. The latter are distinguished by a * in the enumeration below:—

Tricholoma guttatum (Schæffer), about half a dozen characteristic specimens.

Clitocybe tornata (Fries), only seen in this country two or three times previously.

**Collybia tabescens* (Scopoli), for the first time.

**Mycena discopus* (Lev.), a very minute species on dead leaves, which had previously escaped notice.

Hygrophorus penarius (Fries), only one or two specimens, easily confounded on only cursory examination with *Hygrophorus eburneus*.

Cantharellus Friesii (Quelet), resembling a little the common *Cantharellus aurantiacus*.

**Psalliota compulrus* (Fries), the only representative of the true Mushroom group.

Polyporus nidularius (Fries), several fine specimens from a tree near Loughton station.

Corticium comedens (Fries), on dead sticks common, but previously overlooked.

Telephora fastidiosa (Fries), with a very strong and somewhat fetid odour.

Bisporella monilifera (Saccardo), in great quantity on various stumps associated with the common black mould, *Bispora moniloides*. This is a small Peziza or Helotium, of which it is now affirmed that the black mould is the conidial form, although the evidence is not quite convincing.

Diatrype disciformis (Hoffmann), common on dead twigs, but not previously notified in the lists.

After tea the ordinary meeting was held, at which the results of the foray, as far as they had then been ascertained, were announced by Dr. M. C. Cooke and Mr. Massee.

Later on Mr. Massee exhibited a series of wall diagrams, printed in colours, of some of the principal diseases of trees, and gave a running commentary upon the different species, explaining the diagrams. He then announced that the nine diagrams, of which these were advanced proofs, were part of a series which the Board of Agriculture had resolved to issue at a cheap rate for the benefit of those interested in arboriculture. On the tables were also exhibited a series of twenty coloured drawings by Dr. M. C. Cooke, illustrative of common plant diseases in the various stages through which they pass in the history of their lives.

It was announced that a complete and revised list of the Hymenomycetes of Essex, by Dr. Cooke and Mr. Massee, was in preparation, and would be published in the *Essex Naturalist*; also extra copies would be printed and sold at a moderate price to be used as check lists. *M. C. C.*

CORK AGRICULTURAL SHOW.

OCTOBER 13.—The Cork Agricultural Society's annual fruit, grain, and root show was opened on the above date in the Assembly Rooms. There was a large number of entries in each competition, the show of fruit being particularly attractive. The climate of Ireland is admirably suited for the growing of fruit. Two very pleasing adjuncts to the show were the very tastefully-arranged displays of flowers and fruit by Messrs. HARTLAND, Lough Nurseries, and Messrs. SAUNDERS, Friars' Walk Nurseries. The fruit shown in these stalls was of a remarkably fine colour and excellent quality. The classes for fruits and vegetables which were confined to amateurs and gardeners were numerous and well contested, and included those for Grapes, Plums, dessert and cooking Apples from the open, Pears grown in the open, dishes of dessert fruits, &c. An interesting section was the one for fruit in packages; also another for the best barrels of dessert and of cooking Apples packed so as to compete as nearly as possible with those sent from America.

DEPARTMENT OF AGRICULTURE, IRELAND.

FRUIT SHOW IN DUBLIN.

OCTOBER 19 & 20.—This show, organized by the Department of Agriculture and Technical Instruction for Ireland, was held on October 19 and 20, in the magnificent buildings of The Royal Agricultural Society, at Balls Bridge, Dublin, and huge as the hall is, the space was filled with the splendid display collected from all parts of Ireland, the entries reaching a total of 2,664, practically all of which were for hardy fruit grown in the country.

The principal idea of the Department in organizing this show was to foster and develop the fruit-growing industry in Ireland, and with a view of getting the

ideas of all classes, a conference was held on the second day of the show on the subject, Sir Horace Plunkett being in the chair.

The exhibits were divided into nearly 100 classes, the Provinces having separate classes for collections of twelve and of six dishes of Apples, the single dish classes being open to all Ireland. The classes open to big growers for a collection of twelve dishes of Apples, including eight cooking and four dessert varieties, were not particularly well filled, except that for the Province of Leinster, the figures being 2 for Ulster, 2 for Connaught, 4 for Munster, and 32 for Leinster, the latter class being probably the best class in the show. The 1st prize was won by Viscount DUNCANNON (gr., Mr. J. G. Weston). 2nd, Mrs. JAMESON. 3rd, Earl of DROGHEDA.

In the Amateur section, the class for twelve dishes, Ulster was represented by 9 entries, Munster 8, Connaught 2, and Leinster 17; the classes for six dishes being filled in about the same proportions.

In the classes for single dishes the competition generally was very keen, except in a few for the newer varieties, as the following figures will show—entries for King of the Pippins 62, Blenheim Orange 77, Ribston 55, Cox's Orange Pippin 90; while the class for any other variety of dessert Apple brought no fewer than 143 entries.

The Department overcame this by giving an extra number of prizes in this class, 5 firsts, 6 seconds, and 4 thirds being distributed. In the classes for cooking varieties it was much the same, 43 dishes of Ecklinville being staged, 45 Cox's Pomona, 38 Lord Derby, 74 Warner's King, 59 Peasgood's, 41 Bismarck, 53 Lane's Prince Albert, 70 Bramley's Seedling, culminating in the huge total of 193 dishes, in the any other variety (cooking) class.

Pears are not nearly so largely grown, though 32 dishes of Pitmaston Duchess were shown, 25 dishes of Doyenné du Comice, 56 any other ripe variety not classed, and 55 dishes of keeping Pears, any variety. One of the most important features were the packing competitions (for Pears and Apples), brought about with the idea of instructing the country people in the best way of putting good fruit on the market, the judges in this section being practical market salesmen from Belfast, Dublin, and Manchester. These classes were also extremely well filled, classes of 40, 50, and 60 being general.

The trade exhibits were especially good, and well put up. In the class for Irish nurserymen for exhibits of hardy fruit in a space 20 feet by 4 feet, Messrs. SAMUEL M'GREY & SON were placed 1st; HUGH DICKSON, 2nd; and Messrs. ALEX. DICKSON & SONS, 3rd; very little difference being apparent between either exhibits.

The judging in some of the classes met with considerable hostile criticism; but in the opinion of many of the practical men visiting the show the number of judges should have been trebled in order to cope with the huge number of exhibits put up, as the judging was still going on after the public was admitted.

It was without a doubt the finest exhibition of hardy fruit ever got together in Ireland, and should do much good in encouraging owners to plant in a country parts of which can produce Apples fit to compete with those grown in any part of the United Kingdom.

Among the exhibitors of non-competitive exhibits were Messrs. RIVERS & SON, Sawbridgeworth; Messrs. DRUMMOND & Co., and others.

DÜSSELDORF INTERNATIONAL EXHIBITION.

EXHIBITION OF ORCHIDS.

The last Orchid exhibition held at Düsseldorf from October 20 to 23, was as successful as the two previous ones. Exhibitors were numerous, and the sight of the beautiful hall was really grand.

HERRN OTTO BEYRODT, Berlin, director of the Orchid exhibitions, decorated an immense space with more than 500 plants, among which a beautiful lot of fifty *Cattleya aurea* was in flower, as well as *Cattleya labiata*, *Oncidium varicosum* Rogersi, *Dendrobium Phalaenopsis Schroderianum*, *Cypripedium* and *Odontoglossum crispum*. The jury awarded the highest prize of honour to this exhibit.

Mr. PEETERS, Brussels, secured a special prize of 600 marks for a magnificent group of seventy *Cattleya* and *Lælia* hybrids, among which the very fine *Cattleya Hardyana* alba, *C. Peetersi* (*C. labiata* × *C. Hardyana*), *C. Sir F. Wigan* (*C. aurea* × *C. Schofieldiana*), *Lælia-Cattleya imperator* (*C. aurea* × *L. C. elegans* Turneri), *L. C. luminosa* (*L. tenebrosa* × *C. aurea*), and a magnificent hybrid of *L. C. elegans* × *C. Hardyana*.

Mr. MARON, Brunoy, France, also secured a special prize of 600 marks for his group of forty-five *Cattleya* and *Lælia* hybrids. Here we noted good *Cattleya* *Fabia* var. *Vigieriana* (*C. aurea* × *C. labiata*), *C. Maronii* (*C. velutina* × *C. aurea*), and a fine variety of *Lælia-Cattleya* *Truffautiana* (*L. tenebrosa* × *C. aurea*).

CLASS FOR THE FINEST CATTLEYA HYBRID.

The 1st prize was awarded to Mr. PEETERS, Brussels for the wonderful variety of *Cattleya* *Peetersi* with a

perfect-shaped flower of very dark colour, and having a dark velvet-coloured lip turning to black. The 2nd prize was awarded to Mr. MARON, Brunoy, France, for a very fine *Cattleya Folia* var. *Vigieriana*.

Mr. PEETERS, Brussels, secured the 1st prize for a group of twelve *Vanda cœrulea*, and a special prize for a magnificent well-shaped and pure white *Cattleya labiata alba*.

Mr. LAMUREAU, Brussels, secured the 1st prize for a very good group of Orchids, among which were the beautiful *Cattleya aurea*, *Lælia* - *Cattleya luminosa*, *Cattleya Hardyana*, *Cattleya Pectersi*. 1st prize for a collection of thirty *Cypripediums*, among which were noted *C. Chapmani*, *C. Mme. Jules Hye*, *C. insigne Sanderae*, *C. glaucophyllum*, *C. Frau Ida Brandt*. 2nd prize for *Cypripedium Minerve* (*superbiens* × *exul*), a 2nd prize for *Oncidium superbiens*, and 2nd prize for a well-flowered *Cattleya Wendlandiana*.

Mr. THÉODORE LAUWELS, Meirlebeke, near Ghent, secured the 1st prize for a group of twenty-five Orchids; 1st prize for the twelve finest *Cattleya aurea*, and 1st prize for the finest *Vanda*. The plant shown was a *Vanda cœrulea* with five strong flower-spikes bearing seventy-one large and fully-developed flowers.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a special prize for a fine group of twenty-five *Cattleya* and *Lælia* hybrids, consisting of good *L. C. callistoglossa*, *L. C. luminosa*, &c.

Mr. MARON, Brunoy, France, secured 1st prize for a fine specimen of *Cattleya Maroni* bearing fifteen flowers on two heads.

Mr. KARTHAUS, Potsdam, showed a very good group of fifty *Dendrobium Phalaenopsis Schroderianum*, for which he was awarded 1st prize.

Herr BARON FURSTENBERG, was awarded 1st prize for twenty-five Orchids in flower, and 1st prize for twenty botanical Orchids.

Messrs. DUCHESNE LANTHOINE & Co., Watermael, Brussels, secured 1st prize for a group of fifty Orchids in flower, 1st prize for *Cypripedium Madame A. Elen* with three flowers on one spike, 1st prize for thirty *Cypripediums*, special prize for a fine *Cattleya Folia* var. *Vigieriana*.

M. BERANCK, Paris, was awarded 2nd prize for twelve *Vanda cœrulea*; 2nd prize for twenty-five *Oncidium varicosum Rogersi*; and 2nd prize for a group of twenty-five Orchids in flower. Special prize for *Cypripedium* "Souvenir de Düsseldorf" (*C. bellatulum* × *C. Rothschildianum*), *Cypripedium Beyrodtii*, and a well-flowered *Vanda cœrulea*.

M. DIETRICH, Brussels, was awarded 2nd prize for a group of fifteen *Cypripediums*, among which was a very good specimen of *Cypripedium insigne Sanderae*.

NATIONAL CHRYSANTHEMUM.

OCTOBER 24.—The usual monthly meeting of the Executive Committee took place at Carr's Restaurant, Strand, on the above date. Mr. Thomas Bevan presiding over a large attendance. Letters were read from the Crystal Palace Co., relating to certain details of the November show; from the Royal Horticultural Society, as to the terms upon which special horticultural societies could hold their exhibitions in the Horticultural Hall, which were considered very disappointing; from the President (C. E. Shea, Esq.), announcing his willingness to preside at the annual dinner at the Holborn Restaurant on November 23, for which the Venetian Chamber had been secured; and from Mr. H. T. Berridge, announcing the death, on Thursday last, of his father, Mr. J. T. Berridge, at Tooting, who was an old and much-respected member of the Society.

The Secretary announced that the prize money awarded at the October show, amounting to £38 17s. 6d., had been paid; and the two handsome silver medals of the Crystal Palace Co., suitably engraved, were produced, and ordered to be sent to their respective winners.

An interim financial statement, showing a substantial balance in hand with few liabilities, was produced and passed. It was announced that arrangements had been made for the Floral Committee to meet at the Crystal Palace, at 1 P.M., on the 2nd proximo; and the Classification Committee at 1.30 P.M.; also that arrangements had been made for breakfast and luncheon as usual. A number of stewards were appointed, and the secretary stated that owing to the impaired state of his health he had made ample arrangements for the staging of the exhibits should he be unable to be present early in the morning. The outlines of a circular to exhibitors was also reported. A very satisfactory report was made by the Committee of the Market Show on December 15, which promises to be a remarkable success. New members were elected, including several Fellows.

FLORAL COMMITTEE.

A meeting took place in the Essex Hall on the above date, Mr. Crane presiding, when the following awards were made. First-class Certificates of Merit were awarded to—

Japanese "Walter Jinks."—A large, full, deep, magenta-pink variety with pale silvery reverse, the

florets broad, long, and somewhat incurving. A fine and striking variety. From Mr. W. JINKS, The Gardens, Knowle Green House, Staines.

Japanese "Edith Smith."—Ivory-white with pale sulphur centre, broad, massive florets, the basal ones long, drooping, and slightly curling at the points. From Mr. H. J. JONES, Ryecroft Nursery, Lewisham.

Decorative and Market "Kathleen Thompson."—A sport from the rose-coloured *Caprice du Printemps*, which was introduced some four years ago. The sport is of orange-crimson colour with a gold reverse, and the flowers are large and full in centre. The habit of growth is dwarf and free-flowering. A very fine market variety. From Mr. J. H. THOMPSON, Brimsdown Nursery, Enfield Highway.

Japanese "Merstham Yellow."—The flowers have a rich yellow sheen, and are very effective in colour, but rather undersized as shown. The variety was Commended. From Mr. H. J. JONES.

GARDENERS' DEBATING SOCIETIES.

KINGSTON GARDENERS'.—There was a very large attendance of members and friends recently at the meeting of this Society, held in Fife Hall, to hear a lecture by Mr. J. Gregory, of Croydon, on "Gardens I have Visited," which was rendered specially attractive by the aid of some 100 lantern pictures, all provided by Mr. Gregory, and shown by Mr. W. Hyslop. Mr. E. H. Jenkins presided. The lecturer took his audience into many fine gardens, showing charming views, fine plants, and numerous interesting features. In the course of the discussion which followed, casual reference was made to greenhouse Heaths as plants the cultivation of which was hardly understood now. Mr. A. Dean reminded the meeting that they were there on the site of Jackson & Sons' nursery, where Heaths were once grown in great excellence.

READING GARDENERS' MUTUAL IMPROVEMENT. When Mr. F. Keeble, M.A., Director of the Horticultural Department of the Reading College, threw out the suggestion to the President of the Reading Gardeners' Mutual Improvement Society (Mr. Leonard Sutton) that a botanical class should be formed in conjunction with the two bodies, the idea was taken up most heartily by the members. With this end in view a meeting, presided over by Mr. Leonard Sutton, was held on Thursday evening in the College Laboratory, and was exceedingly well attended, members coming in from Henley, Wallingford, Mapledurham, Twyford, Eversley, Bucklebury, Wokingham, &c. After a few remarks by the Chairman, Mr. F. Keeble made a suggestion as to the manner in which the class should be conducted and the course of lectures that should be given. The Principal of the College, Mr. W. M. Childs, expressed the pleasure he felt that a class in connection with the two bodies was about to be formed, and pointed out the great benefit that must accrue to all connected with it. Thursday was the day appointed for the class to meet, and the time 6.45 P.M., commencing on the 20th inst. About forty have already given in their names as members of the class.

—There was a large attendance of members present at the last fortnightly meeting of the above Association, presided over by Mr. F. Alexander, when Mr. G. Baskett, of Wood Lea, read a paper on "The Rose Garden and the best Varieties with which to Plant the same." Mr. Baskett proved himself well acquainted with all the details of his subject, and a most interesting and practical discussion ensued. The chief points touched upon were the history of the Rose, the site for the formation of a good Rose-garden, soil, arrangement, buying Roses, planting, varieties to grow, pruning, and Roses on their own roots. Several new members were elected.

BRISTOL AND DISTRICT GARDENERS'.—The opening meeting of the winter session was held recently, when Mr. House delivered a lecture on "Hardy Perennials." Mr. P. Garnish occupied the Chair. The lecturer gave details of the culture of many of our perennial flowers. He treated on Pentstemons, Delphiniums, Tritomas, &c., showing how these beautiful flowers could be had in bloom almost all the year round. A splendid collection of Delphiniums, Tritomas, Pentstemons, &c., were sent from Coombe Nurseries, which added much to the success of the evening.

KINGTON HORTICULTURAL.—The objects of this Society are not only to create an interest among professional gardeners, but also among amateurs and small allotment holders. With this end in view, practical lectures have for several years been given once a month and small shows held with encouraging success. The results of these lectures are not only seen at the monthly shows and the annual exhibition, but the members, including working men, have taken many prizes at the Leicester and neighbouring shows. A recent visit to the Kington Allotment Gardens, of which many of the holders are members of the above Society, produced a favourable impression with the general good cultivation of the various plots of ground. The displays of early-flowering Chrysanthemums were particularly well grown. Among some of the varieties noticed were *Horace Martin* (deep yellow), *President Lefevre*, *Polly* (deep orange), *Nellie Blake* (crimson), *Ralph Curtis* (creamy-white), *Bronze Prince* (deep crimson), *Ruth Williams* (golden), *Queen of the Earlies*, *Godfrey's Pet* (pure yellow), *Market White*, *Carrie* (deep yellow), *Goacher's Crimson*, *Parisiana* (spotless white), *Roi des Blancs*, *King of the Whites*, *Louis Lemaire*, *Bronze Prince* (reddish-bronze). T. S.

CRAWLEY GARDENERS'.—The opening meeting of the winter session of the above Association was held

on Wednesday, October 13, in the British Schools, Crawley. The chair was taken by H. Hobson Finch, Esq., and Mr. R. Dean, V.M.H., read a paper on "Floriculture and Florists of the Past Fifty Years." Mr. Dean in opening referred his audience to the year 1825, at which period men and women were engaged in improving many kinds of the old florists' flowers, such as the *Auricula*, *Verbena*, *Anemone*, *Ranunculus*, &c. The lecturer gave instances of the work of some of the leading horticulturists of that age, men such as George Glenny, who was Editor of the *Horticultural Journal*, and afterwards wrote many pages for the *Annals of Horticulture*; Mr. George Wheeler, Mr. J. T. Wood, Dr. Hardy, who in 1847 edited the *Midland Florist*; and Mr. Dodwell, whose labours did so much for the improvement of the Carnation, especially the yellow-ground varieties. Mr. Dean next told how the National Floricultural Society was formed and a tribunal set up, from the leading nurserymen and amateurs, before whom all florists' flowers might be sent for the opinion of competent judges, much the same as we now have in the form of the Floral Committee of the Royal Horticultural Society. He then briefly outlined the changes which certain florists' flowers, such as the *Auricula*, *Anemone*, *Calceolaria*, *Primula*, &c., are undergoing. He also spoke of the introduction and improvement of such flowers as the Japanese *Chrysanthemum*, the glorious *Clematis Jackmani*, *Begonias*, *Dahlias*, *Sweet Peas*, &c., about all of which interesting accounts were given.—Messrs. J. Cheal & Sons, Lowfield Nurseries, made a splendid honorary exhibit of choice Dahlias and fruit.

BECKENHAM HORTICULTURAL.—The first lecture of the winter session, 1904-5, was given on October 14 by Mr. G. Bunyard, V.M.H., his subject being "Fifty Years among Roses." Mr. R. Murray-Hyslop, B.U.D.C., occupying the Chair. The lecturer reviewed the progress made in raising new varieties for half a century, giving the dates when most of the standard varieties were introduced. Mr. Bunyard also commented on many of the newer varieties. Mr. T. Crosswell was awarded the Society's Certificate of Merit for an excellent exhibit of Tomatoes, which included two seedling varieties of his own raising.

REDHILL, REIGATE, AND DISTRICT GARDENERS'.—This Society held its fortnightly meeting on Tuesday, October 11, Mr. W. P. Bound in the chair. Considerably over 100 members were present to hear a paper on "Vegetables for Home Consumption," given by Mr. J. W. Barks, of The Gardens, Castle Hill. Much useful information was derived from the lecturer's paper, and during the discussion many questions were discussed. Collections of fruit and vegetables, also Violets, were exhibited. The Chairman performed a very pleasant duty by presenting a very handsome marble clock to Mr. H. Miteham, the late Secretary, for the able manner in which he had performed his duty during his two years of office.

DEVON AND EXETER GARDENERS'.—The annual meeting was held in the Exeter Guildhall on Wednesday, October 19, under the presidency of the Mayor. The Secretary's and Treasurer's reports for the year were read and adopted. The Secretary (Mr. W. Charley) gave a short summary of the year's work, which has been most successful. The Treasurer (Mr. W. Mackay) stated that the balance, though still on the right side, was smaller than it had ever been. The President (Mr. E. A. Sanders), the Vice-Presidents, the Hon. Secretary, and Hon. Treasurer were re-elected, and a committee appointed, in which three retiring members were replaced by three other members. The usual votes of thanks were accorded to the officers, and to the Mayor for presiding, and for his continuing to grant the use of the Council Committee-room for the Society to hold their meetings in. The President intimated that he would give £5 to be awarded as prizes at the discretion of the Committee. A. H., Exeter.

CARDIFF GARDENERS'.—The usual fortnightly meeting was held on Tuesday, October 18, Mr. Tom Clarke in the chair. Mr. J. Baskin, jun., gave an instructive and illustrative lecture on the "Pruning of Apples and Pears." A collection of young trees in all stages was brought from Bassaleg, thus showing the actual growths and how to deal with them in the various stages. At the conclusion the lecturer was most heartily thanked by the meeting. Mr. DINWOODIE, head gardener, The Duffryn, near Cardiff, staged a dish of six Pears Pitmaston Duchess, and an equal number of Apple Golden Noble. The Pears averaged from 24 to 28 oz. each in weight. J. J.

LOUGHBOROUGH AND DISTRICT GARDENERS'.—At the fortnightly meeting of the members of this Association, held on Tuesday evening, October 18, Mr. F. W. E. Shrivell, F.L.S., gave an instructive lecture upon "Chemical Fertilisers in the Garden." The lecturer deprecated the name "artificial manures." By the aid of a powerful oxygen lantern he was able to give illustrations of the chalk cliffs and deposits of lime formation, the nitrate fields of Chili, and alluded to the natural deposits of sulphate of potash. These and other similar manures were "natural manures." The results of judicious applications of nitrogenous manures on Oats, Potatoes, Beetroot, &c., were demonstrated by pictures. Allusion was made to the nitrification of the soils by bacteria. Mr. T. Simpson supplied and manipulated the lantern.

CROYDON AND DISTRICT HORTICULTURAL.—A lecture was given by Mr. J. Harrison Dick, sub-editor of the *Journal of Horticulture*, recently, on "A Horticultural History of the Nineteenth Century," illustrated by excellent lantern views. The structures in use in the early eighteenth century were compared with those of the present time. The brazier, a kind of big cauldron filled with live coals, fixed on wheels, and so moved to different parts of the house, was the mode of heating. This was followed by flue heating. Although as far back as 1788 steam was known to a few, yet it was not till

Thirty years after that it began to be used. Another advancement made is the etherisation and retardation of plants. Hybridising and cross-fertilisation have also worked extensive changes, especially in floriculture. Some excellent exhibits staged created considerable interest.

BINFIELD AND DISTRICT GARDENERS'.—The above Society opened its Winter Session on Tuesday, October 11, with an exhibition of fruit, which proved a great success. There was a large attendance of members present. Among so much choice fruit it was difficult to particularise, but mention should be made of the Pimston Duchess Pears brought by Mr. ASHMAN, head gardener at Bellingham Park. The colour of the fruit exhibited was particularly noticeable. After the show was over the fruit was sent to the University Settlement in Blackfriars Road, London.

EOHAM AND DISTRICT GARDENERS'.—The October meetings of this newly-formed Society was held on the 5th and 19th inst., when on the former date Mr. J. Wright, V.M.H., gave a lecture on "Surrey Gardens and Gardeners," in which many former and many present trade and private establishments were mentioned. At the close of the lecture, Mr. Wright presented a silver watch and chain to a lad for the best cultivated plot in the Surrey Continuation School Gardens for 1904. On the 19th, Mr. W. Swan favoured the members with an instructive paper on "Window Gardening," a large and appreciative audience attending.

ALTRINCHAM AND DISTRICT GARDENERS'.—The second annual fruit conference of this Society was held on Thursday, October 20 last, when a large and comprehensive collection of fruit, flowers, and Potatoes was staged. The attendance was excellent. The exhibition included several new varieties of Apples. Messrs. G. Bunyard & Co., Maidstone, Kent, staged a large collection of fruit from their nurseries, including excellent dishes of Allington Pippin. Messrs. Caldwell & Sons, The Nurseries, Knutsford, staged fifty dishes of Apples. Messrs. Caldwell's fruit was declared the finest exhibited. Messrs. Dicksons, Ltd., Chester, staged upwards of 150 dishes of fruit and Potatoes. Messrs. Dickson & Robinson, Seedsmen, Manchester, exhibited thirty-six dishes of Potatoes. Sir F. Forbes-Adams, Bart., Mere Old Hall, Mere (gr., Mr. Bromley), staged an extensive collection of fruit of excellent quality. Other exhibitors of fruit were R. P. Gill, Esq., Ashton-on-Mersey; P. McGregor, Esq., Bowdon; H. O'Hanlon, Esq., Bowdon; and C. T. Percival, Esq., Woodlands Park, Timperley, A. W. W.

MANCHESTER HORTICULTURAL.—The annual meeting of the above Society was held at the Exchange Hotel, Manchester, on Friday evening, October 21, when the officers were elected for the coming season. These proceedings were followed by a social gathering, which was attended by upwards of eighty members. James Brown, Esq., President, occupied the chair, supported by Mr. F. Robinson. Mr. P. Weathers, Mr. A. Stansfield, and Alderman Gibson. Tea was partaken of in the large dining-room, followed by a musical entertainment. The arrangements were carried out in a very able manner by the Hon. Secretary, Mr. C. Paul, of the Royal Botanic Gardens, Manchester. A. W.

SCHEDULES RECEIVED.

CARDIFF AND DISTRICT CHRYSANTHEMUM SOCIETY'S show in Park Hall, Cardiff, on Wednesday and Thursday, November 2 and 3, 1904.—Mr. John Julian, Hon. Secretary, 31, Richards Terrace, Roath. 25

GRIMSBY CHRYSANTHEMUM AND FRUIT SOCIETY.—The annual exhibition will be held on November 17 and 18.

PUTNEY, WANDSWORTH AND DISTRICT CHRYSANTHEMUM SOCIETY.—The exhibition of this Society will be held in the Town Hall, Wandsworth, on Wednesday and Thursday, November 9 and 10, 1904. The Honorary Secretary is Mr. J. F. McLeod, Spencer Cottage, Roehampton.

THE SHEFFIELD CHRYSANTHEMUM SOCIETY'S Annual Show in the Corn Exchange, Sheffield, on Friday and Saturday, November 11 and 12, 1904.

CHEETHAM HILL, BROUGHTON, AND CRUMPSALL HORTICULTURAL SOCIETY'S exhibition on Saturday, November 19, 1904.

GUERNSEY HORTICULTURAL AND AGRICULTURAL SOCIETY'S Autumn Show, the prizes at which include a Challenge Cup of the value of £10 10s., to be held on Wednesday and Thursday, November 2 and 3, 1904. Hon. Secretary, Mr. P. E. Watson, 18, Mount Row, Guernsey.

ST. NEOTS CHRYSANTHEMUM SOCIETY'S Show in the Corn Exchange, St. Neots, on Tuesday, November 8, 1904. Hon. Secretary and Treasurer, Mr. J. Wood Ingram, jun., St. Neots.

SOUTH SHIELDS AND NORTHERN COUNTIES CHRYSANTHEMUM SOCIETY'S Show on Wednesday and Thursday, November 9 and 10, 1904, in the Royal Assembly Hall, South Shields.

TRADE NOTE.

Mr. JOHN A. LAING, late of John Laing & Sons, Nurserymen, Forest Hill, London, S.E., informs us that he severed his connection with this firm on October 22 last. His address will be 8, Peak Hill, Sydenham.

BOTANICAL LECTURES AT CHELSEA.

The third lecture by Sir WILLIAM THISELTON-DYER, K.C.M.G., LL.D., F.R.S. (Director of the Royal Botanic Gardens, Kew), on "Modern Botany and its Problems," was delivered at the Chelsea Physic Gardens, on Wednesday, October 26. The Hall was again filled with an appreciative audience, about sixty students and other persons being present, among whom were noticed Mr. J. G. Baker, F.R.S., Dr. Henry, Prof. Farmer, and others.

Continuing his remarks on Chlorophyll, Sir WILLIAM referred to the action of "sensitisers," which are made use of in the photographic plate. These remove from the field the products of the decomposition of the sensitive salts, and allow the sensitiveness of the plate to be still higher intensified. Chlorophyll may be compared to these chromatic sensitizers, although the analogy must not be pressed too far.

The beautiful nascent green observed in spring when the chlorophyll has not completely masked the xanthophyll, is familiar to us; then passing to midsummer with the heavy bluish tinge in the foliage due to the slow decomposition in the leaf; and later the gradual breaking up of the substance, the phylloxanthin giving way, and the xanthophyll asserting itself, giving us the lovely autumn tints. The colouring matter of blood is tolerably permanent, and does its work without undergoing decomposition. How then does sunlight so easily destroy chlorophyll?

It has been pointed out before that the economic co-efficient of plants is low. The total energy absorbed is but 6.6 per cent., and of this amount no one has been able to find that the amount of energy used is more than 3. Plants are adapted not to the intense and exceptional illumination on a bright summer day, but to that which obtains generally in a typical temperate climate. The plants themselves protect their chlorophyll from excessive supplies of solar energy by arranging their chlorophyll corpuscles on their radial walls in direct sunlight, whereas in modified light they assume a position near the horizontal walls. Masses of tissues are also adapted for this protection against excessive light. The Sorrel droops its leaves in such a manner as to present their edges to the direction of direct light. In the tropics an enormous number of plants place their leaves in such positions so as to protect their chlorophyll against intense solar radiancy. In the Palm-house at Kew many typical examples of this can be seen. These tropical plants also have the young foliage tinged with a red colouring matter. This colour was thought to protect the plants against heat; but they allow all the effective solar radiations to pass through; they only cut out the photo-chemical blue rays. These rays produce paralysis in the protoplasmic bases of the chlorophyll corpuscles, inhibiting their functions.

Where does the construction of carbon hydrates take place? It is not in the chlorophyll itself, but in the bases of the chlorophyll corpuscles. It has been determined that nitrifying bacteria have the power of forming carbo-hydrates in the absence of light; they obtain their energy from the unburning of ammonia salts into nitric acid. It has also been found that etiolated chlorophyll corpuscles in parts not exposed to light are associated with the formation of starch; thus it is possible that in green plants the carbo-hydrates can be made without the action of chlorophyll. The nature of the first products of photosynthesis is a much debated subject, although the theory put forward by Baeyer is the more acceptable. He regards the formation of formaldehyde as the initial step which may give rise without much difficulty to the formation of some kind of sugar. Spirogyra could be made to grow in a solution evolving formaldehyde in a nascent form. When White Mustard was grown in a solution of formaldehyde, it was possible with proper precautions to reduce the light sufficient to stop the working of the chlorophyll when the plant absorbed the formaldehyde by its roots from the solution. Formaldehyde in a pure state is a very stable body, but the presence of an impurity, such as a metallic salt, sets up a

change. This fact may throw a light on the presence of many of the mineral salts whose presence is otherwise difficult to explain. Potash is essential to plant nutriment, yet no one has discovered the part it plays unless it be in this connection. Potash, as it were, greases the wheel of carbon assimilation.

Corrections at p. 294: In the report of Sir W. T. Thiselton-Dyer's lecture at Chelsea, for "Church" read "Tschirch"; and for "grammes" read "1.5—3 grains."

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending October 22, 1904.

1904.		TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.			TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.
OCTOBER 16 TO OCTOBER 22.	At 9 A.M.		DAY.	NIGHT.	Lowest	At 1-foot deep.	At 2-feet deep.	At 4 feet deep.					
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		deg.	deg.	deg.	deg.				
MEANS	53	52	60	48	46	53	53	54	0.62	1	15		

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Oct. 22, is furnished from the Meteorological Office:—

"The weather during this week was mild and dull generally, with a very humid atmosphere, and much fog or mist. Rain fell frequently in Ireland and the western half of Great Britain, and also in the Channel Islands; but the amounts were not, as a rule, large.

"The temperature was considerably above the mean, the excess ranging from 4° in Scotland, N., and the Channel Islands, to 6° in many other districts, and to 7° in the Midland Counties. The highest of the maxima were registered on the 18th at most stations, and ranged from 69° in England, E. and S., and the Midland Counties, to 61° in Scotland, E. The lowest of the minima, which were recorded on the 16th, ranged from 27° in England, E., and 29° in Scotland, E., to 41° in Scotland, W., and Ireland, N., and to 48° in the Channel Islands. Most of the nights were very mild, the thermometer remaining above 50° even at inland stations.

"The rainfall slightly exceeded the mean in England, N.W., and over Ireland, and just equalled it in England, S.W., but was less in all other districts. In the Midland Counties, Scotland, E., and England, N.E., the fall was very slight.

"The bright sunshine was deficient in all districts except Scotland, E. The percentage of the possible duration was only 12 in Ireland, S., and England, S.W., 14 in Ireland, N., and 15 in England, S.; while elsewhere it ranged from 18 in England, N.W., to 26 in England, E., and to 33 in Scotland, E."

THE WEATHER IN WEST HERTS.

St. Luke's Little Summer.—The last nine days have all been warm. On the warmest day the temperature in the thermometer screen rose to 70°, and on the three warmest nights the exposed thermometer never fell lower than 48°, both high readings for the season. Previous to this warm period there had not been since the first week in August more than three consecutive days in which the mean temperature was above the average for the time of year. The ground has, of course, also become warm, and is now 2° warmer at 2 feet deep, and 3° warmer at 1 foot deep than is seasonable. Rain fell on four days during the week, to the total depth of rather more than $\frac{1}{2}$ inch. On the remaining three days a measurable quantity of water was deposited in the rain-gauge funnel from fog and dew. Percolation through the bare soil gauge re-started on the 21st, and on the 23rd more than a gallon of rain-water came through it. As yet less than 3 gallons have come through the $2\frac{1}{2}$ feet of soil in that gauge since the present month began. The sun shone on an average for two and a-half hours a day, or for about half an hour a day less than the average duration for the latter half of October. On three days no sunshine at all was recorded. This was a very calm week, the velocity at no time exceeding six miles an hour. The mean amount of moisture in the air at 3 p.m. was about 5 per cent. in excess of a seasonable quantity. *E. M., Berkhamsted, October 25, 1904.*

MARKETS.

COVENT GARDEN, October 26.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Ferns in var., per		
Arbor Vita, per			doz.	2	0-12
doz.	9	0-18	Ficus elastica, per		
Aspidistras, doz.	18	0-36	doz.	9	0-24
Aucubas, per doz.	4	0-8	Lilac, pot, each	5	0
Australian Bush			Lilium speciosum		
Ferns, dozen	10	0-12	rubrum, per		
Azalea mollis, pot,			dozen	8	0-10
each	5	0	Lycopodiums, per		
Bouvardias, pots,			dozen	3	0-4
per doz.	4	0	Marguerites, per		
Cape Gooseberry,			dozen	6	0-10
per dozen	18	0-36	Palms, variety		
Chrysanthemums,			each	3	0-20
per dozen	4	0-18	Pelargonium, s.		
Cocos	12	0-18	scarlet, per		
Crotanas, per doz.	12	0-24	Primulas	4	0-5
Cyclamen	10	0-12	doz.	4	0-6
Cyperus, per doz.	3	0-4	Pteris tremula, p.		
Dracenas, variety,			dozen	4	0-8
dozen	6	0-18	Solanums, per		
Ericas, per dozen	12	0-18	dozen	4	0-6
Enonymus, vars.,			Spiraeas, per doz.	10	0-12
per dozen	4	0-10	Tropeolum, doz.	3	0-4

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Azalea mollis, per			Lily of the Valley	4	0-12
bunch	1	6	Lobelia cardinalis,		
Bouvardias, doz.	4	0-6	12 bunches	4	0-6
Callas, per doz.	4	0-6	Marguerites, yellow,		
Cape Gooseberry,			12 bunches	0	9-16
per doz. bunch.	6	0-8	Marguerites, white,		
Carnations, doz.			dozen bunches	2	0-6
bunches	9	0-36	Michaelmas Daisy,		
Chrysanthemums,			per doz.	3	0-6
dozen bunches	3	0-24	Mimosa (Acacia),		
Croton Leaves	1	6-20	packet	1	6
Dahlia, per doz.	3	0-6	Narcissus	4	0-6
Encharis, doz.	1	6-20	Orchids, various,		
Ferns, Asparagus,			per dozen	2	0-8
per bunch	0	8-16	— Cattleyas	6	0-12
— French, doz.			Pancratiums, doz.	2	6
bunches	0	3-04	Pelargoniums,		
— Maidenhair,			zonal, dozen		
doz. bunches	4	0-6	bunches	3	0-6
Foliage, various,			— white, dozen		
per dozen	2	0-6	bunches	3	0-6
Gardenias, box	1	0-20	— double-scarlet,		
Gypsophila, doz.			per doz. bun.	3	0-6
bunches	2	0-4	Roman Hyacinth	8	0-12
Gladious, various,			Roses, Mermet,		
dozen bunches	4	0-6	per bunch	1	0-2
Golden Rod, per			— white, bunch	1	0-2
dozen	3	0-4	— pink, bunch	1	0-3
Heather, Scotch,			— red, bunch	0	6-18
per bunch	0	6-8	— Safranos, bun.	1	0-18
Honesty, bunch	1	0	— Sunrise, bun.	1	0-16
Lilac, French	2	0-4	Smilax, 12 bunch.	1	6-30
Lilium auratum			Statice, 12 bunches	3	0-8
per bunch	2	0-30	Stephanotis	1	0-20
— Harrisil, per			Tuberose on		
bunch	3	6-40	stem, bunch.	0	9-10
— lancifolium			— short, p. doz.	0	2-04
	1	0-26	Violets, doz. bun.	1	0-20
			— Parma, bun.	1	6-20

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe,			Mushrooms (house)		
per dozen	3	0-36	per lb.	0	9-10
— Jerusalem,			Onions, pickling,		
sieve	1	6-20	per sieve	3	0-4
Beans, dwf., p. lb.	0	10	— per bag	5	6-6
Beetroot, bushel	1	0-16	— per case	7	0-76
Brussels-Sprouts,			Parsley, per doz.		
sieve	1	0-16	bunches	1	0-16
Cabbages, tally	2	0-26	— sieve	0	6-10
Carrots, per doz.			Parsnips, per bag	2	6
bunches	1	6-20	Potatoes, per ton	60	0-80
— bag	2	0-26	Radishes, per		
Cauliflowers, per			dozen bunches	0	9-10
dozen	0	9-10	Salad, small, pun-		
Celeriac, per doz.	1	6-20	nets, per doz.	0	9
Celery, 12 bunch.	8	0-14	Shallots, per		
Cress, doz. pun.	0	9	sieve	3	0
Cucumbers, per			Spinach, per		
dozen	1	6-26	bushel	1	0-16
Endive, per doz.	1	6	Tomatoes, Chan-		
Garlic, per lb.	0	3	nel Islands,		
Horseradish, foreign, p. bunch	1	0-12	per lb.	0	2½
Leeks, 12 bunches	1	0-13	— English, doz.	2	6-36
Lettuces, Cabbage,			Turnips, doz.	1	6-20
per dozen	0	9	— bag	2	0
— Cos, per doz.	1	0-16	Watercress, per		
			dozen bunches	4	0

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, bushel	1	6-36	Grapes, Muscat		
— English, sieve			A, per lb.	2	0-30
or half bush.	1	0-60	B, per lb.	1	6-20
Bananas, bunch	7	0-10	— Canon Hall		
— loose, dozen	1	0-18	A, per lb.	3	0-40
Blackberries, peck	1	6	B, per lb.	1	6-26
Chestnuts, per bag	5	0-90	— Alicante, lb.	0	4-10
Cobnuts, per lb.	0	4½	Lemons, per case	10	0-16
Figs, per box	0	6-09	Melons, each	0	4
Grapes, Hambro'			Oranges, per case	10	0-18
per lb.	0	4-10	Peaches A, per		
— Gros Maroc,			doz.	12	0-18
per lb.	0	8-10	— B	3	0-6
— Gros Colmar,			Pears, per sieve	1	6-8
per lb.	0	6-13	Pines, each	2	6-46

REMARKS.—Apples remain much the same in price; only the finest are in request. Blenheim Orange, per bushel, 3s. 6d. to 5s.; King of the Pippins, 3s. 6d. to 5s.; Ribstons, 4s. to 6s.; Fearn's Pippin, 3s. to 4s.; Lord Derby, 3s.; Warner's King, 3s.; other varieties, 1s. 6d. to 3s.; Cox's Orange Pippin, in sieves, 3s. 6d. to 6s. Pears, per bushel, 2s. 6d. to 3s. 6d.; Calabash Pear, per sieve, 3s. to 4s.; Californian Glout Moreau, per case, 8s. to 9s. Crates of French fruits of Doyenné du Comice, 4s. to 5s.; stewing Pears, per sieve, 2s.; Medlars, per case (French), 5s.; Mangos, per dozen, 2s. to 3s.; Grapes, in barrels, 7s. 6d. to 14s.

POTATOS.

Various, home-grown, 55s. to 80s. per ton, John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

SUPPLIES of seasonable flowers are seen in great abundance. Chrysanthemums are the most prominent, among which the variety Soleil d'Octobre is especially noteworthy, the bronze variety being equally good. "Pink Ivory" from Mr. Billingshurst, of Norwood, is excellent; also dwarf plants of Caprice du Printemps in 6-inch pots, carrying a dozen good blooms on each plant. "Ryecroft Glory," grown without disbudding, also dwarf disbudded plants with one flower on each stem, are good. The best white variety seen is "Market White." Cullingfordi is still a favourite crimson variety. Ericas are now plentiful. Messrs. Gregory & Evans brought the first batch of E. hymalis on the 20th. Mr. Sweet has good Ericas. Messrs. B. Millar & Son have very good plants of E. gracilis and E. colorans. Mr. H. B. May has Begonia Gloire de Lorraine, also the white variety (Turnford Hall). The deep crimson variety "Diamant" is well flowered. Cyclamens are good, but they do not sell freely. Marguerites are good and plentiful. Lilium lancifolium rubrum, also L. Harrisil, are not plentiful. Primula obconica is seen in well-flowered plants, also a red-flowered variety of Chinese Primula. Solanums are sold for very low prices. Physalis Francheti is still good. Ferns are over abundant and prices are very low. Excellent plants of Polypodium aureum were sold at 4s. per dozen, and good plants of Pteris are sold equally cheap. It is quite evident that Fern-growing is now much overdone. The new crested Nephrolepis "Westoni" is sold in small plants at about the price of ordinary sorts. Asplenium nidus in small plants, also in "48's," is one of the best market Ferns. Growers complain of trade being very dull.

CUT FLOWERS.

Chrysanthemums are the most prominent, trade being moderately good for the best blooms. Crimson varieties are now more plentiful. Liliums make a great show, especially L. longiflorum. Auratum, lancifolium, rubrum, and album, also tigrinum are good. Lily of the Valley is abundant. Violets are good, the French Parma arriving in large quantities; also the ordinary blue varieties from English growers. On Mr. Blundell's stand "La France," in bunches of six blooms each, make up to 4s. per dozen. Roman Hyacinth is now obtainable. Chinese Asters in red and purple are good. White Lilac is not over-plentiful; this flower always realises a good price. Azalea mollis from retarded plants in various shades of colour is noticed. Orchid bloom continues plentiful. Roses in all colours are good. Carnations are abundant; "Shibyl," soft flesh pink (one of the new American varieties), is pleasing. Encharis, Gardenias, Stephanotis, and Tuberose are well supplied. Bonvardia Humboldti and other varieties are very good. It is found that the new variety, King of Scarlets, does not keep its colour so well as "President Cleveland." Asparagus plumosus nanus in long trails is very good; also Smilax, of which there is a very regular supply. Maidenhair Fern is very plentiful. There is still a large supply of autumn-tinted foliage. Quercus coccinea is one of the most useful subjects, the colour being bright, and the leaves do not fall off. A. H., October 23.

FRUITS AND VEGETABLES.

GLASGOW, October 26.—The following are the averages of the prices during the past week:—Apples, American, 8s. to 20s. per barrel; do., Canadian, 7s. to 20s. do.; do., English, 6s. to 15s. per cwt.; common, £4 to £5 per ton; Lemons, 8s. to 15s. per case; Grapes, Almeria, 8s. to 20s. per barrel; do., home, 9d. to 1s. per lb.; do., English, 6d. to 1s. 3d. do.; Bananas, 5s. to 12s. per bunch; Tomatoes, 3d. to 7d. per lb.; Mushrooms, 2s. do.; Onions, Valencia, 7s. to 8s. per case.

LIVERPOOL, October 26.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatoes, per cwt., Bruce's, 2s. to 2s. 6d.; Main Crop, 3s. 6d. to 4s. 2d.; Up-to-Date, 2s. to 2s. 6d.; Conquest, 2s. to 2s. 6d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. to 1s. 3d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Cucumbers, 1s. to 3s. per dozen; Onions, English, 5s. 6d. to 6s. 3d. per cwt.; do., foreign, 4s. 6d. to 5s. 6d. per bag; Parsley, 4d. to 6d. per dozen bunches; Cauliflowers, 8d. to 1s. 6d. per dozen; Cabbages, 8d. to 1s. 4d. do.; Celery, 6d. to 1s. 4d. do. Fruit: Apples, American, 7s. to 10s. per barrel; do., superior, 11s. to 12s. 6d. do.; Canadians, 7s. to 10s.; superior, 11s. 6d. to 15s.; Pears, American, 2s. 3d. to 4s. 3d. per box; Grapes, Almeria, 6s. 3d. to 8s. 6d. per barrel; superior, 9s. to 10s. 6d.; Oranges, Jaffa, 4s. 3d. to 5s. 3d. per box; Lemons, Malaga, 9s. 3d. to 15s. per case. St. Johns.—Potatoes, 10d. to 1s. per peck; Cucumbers, 3d. to 6d. each; Damsons, 2d. and 3d. per lb.; Filberts, 8d. do.; Grapes, English, 1s. 6d. to 2s. 6d. do.; do., foreign, 6d. to 8d. do.; Pineapples, foreign, 3s. to 5s. each; Mushrooms, 8d. to 10d. per lb. Birkhead:—Potatoes, 6d. to 8d. per peck; Cucumbers, 2d. to 4d. each; Filberts, 6d. to 8d. per lb.; Plums, 3d. and 4d. do.; Grapes, English, 6d. to 2s. do.; do., foreign, 3d. to 6d. do.; Tomatoes, English, 2d. to 6d. do.

Obituary.

ARROW SMITH.—We regret to announce the death, on Saturday, October 15, at his residence, Wheatley House, Darley Dale, at the age of sixty-six, of Mr. Arrow Smith, head of the firm of James Smith & Sons, Darley Dale Nurseries, near Matlock. He was interred at the Parish Church of St. Helen's, Darley, on the 18th instant. We are informed that the business will be carried on by his two oldest sons, James Smith and Matthew Wright Smith, who will trade under the same name as heretofore.

J. T. BERRIDGE.—Mr. Berridge, of Althorp Road, Upper Tooting, an enthusiastic amateur florist and a Fellow of the Royal Horticultural Society, died somewhat suddenly at his residence a few days ago. The Chrysanthemum was his favourite flower, and for many years he had been a member of the National Chrysanthemum Society, for several years acted as one of its auditors, then became a member of the Finance and Executive Committees, but retired a year ago on account of failing health. He was an influential member of the Tooting, Merton, &c., Horticultural Society, and an exhibitor at the exhibitions. He was about sixty years of age at the time of his death, and held a position in one of the West-end banks.

ANSWERS TO CORRESPONDENTS.

** EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BEGONIA: A. S. C. The appearances are due to excessive moisture and condensation of water on the leaves.

BEGONIA RUST: Lorraine, F. G. C., and others. This is due to a mite which is very common on such plants and on Gloxinias. Tobacco-water is the best application.

BOOKS: B. L. W. Roses in Pots, by W. Paul, published at small cost by Simpkin, Marshall, Hamilton, Kent & Co. We know of no book dealing exclusively with Rhododendrons, but they are given considerable space in *Trees and Shrubs for English Gardens* (Cook), obtainable from our Publishing department, price 12s. 5d. —G. W. In *The English Flower Garden* (W. Robinson), you will find much information regarding the making of rockeries. You may

obtain this from our Publishing department, price 15s. 7d.—*Essex. Vines, and Vine Culture*, by Barron, price 5s. 6d., or *The Book of the Grape*, by Ward, price 2s. 9d., from our Publishing department. *Dictionnaire Iconographique des Orchidées* by A. Cogniaux, published by Octave Doyn, 8, Place de l'Odéon, Paris, price sixty francs per annum.

BRACKEN: A. D. The "fog" grass being very thick over the ground probably prevents sufficient moisture reaching the roots of the Bracken, though the Bracken is generally capable of looking after itself in ground in which it has become thoroughly established.

CAUSTIC ALKALI SOLUTION: A. H. F. This may be applied to all hardy fruit-trees and indoor Vines whilst in a dormant state, and will cleanse the Vines of red-spider and mealy bug.

CROQUET GROUND: *Old Reader.* The levelling and making of a croquet ground is a very simple matter. If the ground whereon it is desired to make a croquet lawn should consist of greensward, the first step to be taken is to measure off the necessary available ground-space. The outline of same should be indicated by inserting four short sticks in the ground, one in each corner, the corners of marked-off space being equi-distant from some given point, say straight walk or square of house; the turf should then be removed carefully for relaying when the surface has been levelled. The implements necessary for doing this are a garden-line, a grass edging-knife, and a turfing-iron; but should the edging-knife and turfing-iron not be at hand, a sharp spade may be substituted for them. Stretch the line from point to point at one end, and cut the turf about one inch deep close up to the line with the edging-knife; shift the line 1 foot from this point at either end, and repeat the operation, doing this until the whole of the allotted space has been lined out transversely at 1 foot apart, then shift the line to the side-boundary and line the whole piece at 3 feet apart in that direction. The turfing-iron should then be substituted for the edging-knife, one man pushing the implement evenly 1 inch deep under each individual turf, while another man or boy rolls it up and deposits it close by until the turf has been removed from the outlined space. The ground should then be levelled with a spade, the humps, if any, being thrown into hollows, broken fine, rolled, and raked level. Should the ground have a slight inclination in one direction, all that is necessary is to make the surface level "to the eye" in that direction and relay the turf. But, on the contrary, should the surface have a steep slope in any direction, the soil must be removed from the high end and side, and be used to raise the low end and side to the proper level. This may be easily done by the aid of a dozen or two pegs, a "straight-edge," and an ordinary spirit level, the pegs being driven into the ground more or less (as indicated by the level) at intervals in accordance with the length of straight-edge. Make the soil up level with the top of the pegs, treading and rolling this well down, and raking the surface evenly over in readiness for the relaying of the turf or the reception of grass-seed, as the case may be. A graduating bank at sides and one end will form the boundary of a croquet ground which is made quite level on an oblique surface. While a croquet ground may very well be made on a slightly oblique surface, it is by no means necessary to have a "fall" in it.

FICUS REPENS: *Cheshire.* The specimens you send are of the arborescent form of the creeping Fig, *Ficus repens*, or *F. stipulata*. As in the case of the Ivy, *Ficus repens* has dimorphic leaves, and the erect shoots, bearing large thick leaves and fruits, belong to the form of this Fig, which is equivalent to the condition attained to by the Tree Ivy. See illustrations of both forms of growth, and a fruit, in *Gardeners' Chronicle* for March 12, 1904, p. 171.

FRUIT-TREES AND PARAFFIN OIL: *Essex.* You do not say how this was used.

FUCHSIA: A. C. H. We fear that no so-called white corollaed Fuchsia is absolutely white. Story's Queen Victoria of 1855, which was probably one of the best ever raised, had a few faint lines of scarlet at the base of the corolla, and this appears to be the peculiarity of all obtained since. A white corollaed Fuchsia, absolutely pure white, is an ideal flower to be obtained, it is to be hoped, some day. Messrs. Henry Cannell & Sons, Swanley, who make a speciality of the Fuchsia, offer the following single white corollaed varieties:—*Cadmus*, *Flocon de Neige*, *Tournefort*, and *Delight*; and of double varieties several: two of the best being *Mrs. Molesworth* and *Ballet Girl*; but the corollas are more or less marked at the base with lines of colour. There is yet ample scope for the raisers of new Fuchsias.

GRAPE: *Correspondent.* Your berries are rotten with "Spot" fungus, often described in these pages. See illustrated article, October 8, 1904, p. 249.

GRAPES: *Gardener* should address the Editor on such subjects. The Grapes seem to be good, but their condition is probably due to the absence of sufficient heat and to the atmosphere being too moist.

GREENHOUSE PAINT: *Plymouth.* It is quite true that if much soft soap be used in the hot-water, and scrubbing-brushes are applied vigorously, the paint will be likely to suffer; but by using the soap in suitable quantities and exercising care in the process of cleansing, you will not be likely to remove much of the paint.

LIME FROM BLUE LIAS: H. C. We do not know that this lime is preferable to ordinary lime in the cultivation of Cucumbers, and in your district you would have to pay a higher price for it.

MEALIES: P. E. T. By this term is meant Maize, or Indian Corn, which in South Africa particularly is known as "Mealies."

MEALY-BUG ON VINES: *Vines.* If you have not tried the caustic alkali solution, you might do so. It is described in *Cousins' Chemistry of the Garden*, obtainable from our Publishing department, price 1s. 1d., post free. See also note on the use of hydrocyanic acid gas for the destruction of mealy-bug on Vines, in the *Gardeners' Chronicle*, December 5, 1903, p. 393.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.*—*Robert Sherwood.* 1, Golden Russet; 2, Mère de Ménage; 3, Cockpit; 4, Lincoln Pippin; 5, Fearn's Pippin; 6, Lane's Prince Arthur.—*A. Dunkley.* 1, Beurré Diel; 2, Gansel's Bergamot; 3, Beurré Hardy; 4, Cox's Pomona; 5, Manx Codlin; 6, Blenheim Orange.—*C. Best.* 1, Reinette de Breda; 2, Cellini; 3, Lord Suffield; 4, Annie Elizabeth; 5, Striped Beaufin; 6, Tower of Glamis.—*T. P.* 1, Claygate Pearmain; 2, Winter Queen; 3, White Nonpareil; 4, Adam's Pearmain; 5, Yorkshire Greening; 6, Wyken Pippin.—*J. J. 1*, Warwickshire Pippin; 2, Grange's Pearmain; 3, Deux Ans; 4, Waltham Abbey; 5, Pear Beurré Hardy.—*J. G. P.* 1, Beurré Clairgeau; 2, Marie Louise; 3, Catillac; 4, Yellow Ingestre; 5, Golden Noble; 6, Colonel Vaughan.—*Fiona.* 1, Reinette Nonpareil; 2, Lady Henniker; 3, Small's Admirable; 4, Marie Louise d'Uccle; 5, Magistrate; 6, Fall Harvey.—*D. P. & Son.* Allington Pippin.—*T. U.* Bismarck.—*X. Y.* 1, Bramley's Seedling; 2, Cellini Pippin; 3, Small's Admirable.—*W. R. R.* 1, Calville Blanche d'Ivry (the great sauce Apple of the French);

2, French Crab; 3, Ecklinville Seedling; 4, rotten; 5, Waltham Abbey Seedling; 6, Boston Russet.—*W. H. B.* 1, not recognised; 2, Ne Plus Meuris; 3, Knight's Monarch; 4, Conseiller de la Cour; 5, Minchal Crab; 6, Maltster.—*W. B. D.* Marie Louise d'Uccle.—*J. Taylor.* 1, Melon Apple; 2, Lady Henniker; 3, Warner's King; 4 and 7, Bramley's Seedling; 6, Cox's Pomona; 8, Reinette du Caux; 9, Waltham Abbey Seedling; 10, Stone's Seedling; 11, Sandringham; 12, Small's Admirable.—*P. & S.* 1, Peasgood's Nonesuch; 2, Wellington; 3, Domino; 4, Norfolk Stone Pippin; 5, Lady Henniker; 6, Ecklinville Seedling.—*G. A. H.* 1, King of the Pippins; 2, Worcester Pearmain; 3, Cornish Gilliflower; 4, Marie Louise d'Uccle; 5, Conseiller de la Cour; 6, Beurré de Capiaumont.—*Egremont.* 1, Crimson Queen; 2, the fruit was shrivelled, but it resembles Golden Russet. We cannot form an opinion as to its flavour in such a state. It certainly is a most handsome fruit.—*James Brodie.* Williams' Favourite.—*Trumpet.* 1, Scarlet Golden Pippin; 2, rotten; 4, Wellington; 5, King of the Pippins; 6, Tower of Glamis.—*G. H. S.* Please send fresh specimens, selecting those that are less ripe than those we have received, which are much bruised.

NAMES OF PLANTS: See note under "Names of Fruits."—*Ascot.* *Rhus Toxicodendron*.—*A. H.* Probably *Retinospora squarrosa*.—*H. A.* 1, *Cupressus pisifera*—(*Retinospora squarrosa*) of gardens; 2, *Cupressus* (*Retinospora*) *plumosa aurea*; 3 and 4, *Cupressus* (*Retinospora*) *plumosa*; 5, *Thuya dolabrata*; 6, *Cupressus Lawsoniana* var.—*R. W.* *Rhus Toxicodendron*. Be careful how you handle it.—*G. H. S.* *Smilax aspera*.—*W. C. L.* *Cornus mas*. It is doubtful if the species is poisonous.—*J. McC.* *Pyrus torminalis*, the wild Service Tree.—*A. T.* 1, *Cymbidium cyperifolium*; 2, *C. (Cyperorchis) elegans*; 3, *Dendrobium crepidatum*; 4, *Cirrhopetalum picturatum*.—*June.* 1, *Hymenocallis littoralis*, generally called *Pancratium* in gardens; 2, *Maxillaria picta*; 3, *Dendrobium chrysanthum*.—*W. B. J., Oxon.* *Oxalis variabilis*. The other probably a *Solanaceous* plant of the *Henbane* family. Send with fresh flowers.—*F. B.* One of the common Broom Rapes (*Orobanchae*), a parasitical plant, probably introduced in the peat used for the cultivation of the plants.—*J. H. B.* 1, *Cypripedium Parishii*; 2, *C. x Harrisianum*; 3, *Polygonum cuspidatum*.

PELARGONIUM (GERANIUM): H. P. M. The pink flower upon the white flowered plant may be a sport, but the recently acquired pink-flowered variety has had no influence in its production. This is not a case of mimicry, but the sport may be a reversion to a previous condition.

ROSE: A. K. Watch, with a view to finding the culprit. We cannot see him; but the damage done is like that caused by the slugworm or sawfly.

ROSE LA FRANCE: G. G. It is not remarkable that the flowers do not open at this season of the year.

TOMATO: G. H. It is impossible for us to identify varieties of Tomatos from samples of the fruit alone. All we can say is that those you send are of a small-fruited variety of the "Perfection" type.

WEED-KILLER: S. Arsenic is commonly recommended for the purpose, but it is so dangerous in use we prefer to mention carbolic acid. Either is, of course, a deadly poison, but there may be less likelihood of mistakes occurring in the use of the acid. Common salt is useful, and much less dangerous.

COMMUNICATIONS RECEIVED.—H. A.—C. C., Kylesmore (with thanks).—Sir N. L.—W. E. G., Cork.—Hugh Low & Co. (with thanks).—Sir W. T. D.—J. H. V.—Prof. Trelease, St. Louis.—C. M., Norwich (with thanks).—A. S.—C. H.—H. J. E.—A. G. S.—J. G. W.—W. W.—F. K.—J. B. Carruthers, Ceylon.—Comte de K.—Floria (thanks for contribution of 2s, which will be handed to the Orphan Fund)—Trehane (1s, has been handed to the Beuveval Institution).—J. S. & Son.—F. C.—J. H.—C. D.—J. M. L.—T. H.—W. G.—W. N.—G. H.—J. H. G.—Milson.—W. M.—J. L.—K. B.—S. A. F.—Anon.—C. Ross.—W. Fyfe.—German Gardeners' Club.—W. G. S.—J. Gregory.—W. R. F.—J. P.—M. L.—W. B.—A. O. W.—W. G. W.—H. G. (photograph).—G. M. T.—H. J. J.—F. S.—H. H. R.—J. B. B.—T. J.—F. G.—F. W.—T. C.—H. K. (photograph).—E. H. J.—S. A.



HELICOPHYLLUM ALBERTI, AN AROID FROM TURKESTAN; SPATHE AND SPADIX DEEP PURPLE, SPOTTED.





THE Gardeners' Chronicle

No. 932.—SATURDAY, Nov. 5, 1904.

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PLANT DISEASES.

ALTHOUGH the nature of plant diseases and the methods of combatting them have been frequently brought before gardeners, it is to be feared that comparatively few individuals have practically applied this knowledge. This indifference is no doubt to a large extent due to their seldom experiencing a serious epidemic. Another reason for it is that the books dealing with plant diseases are not well known, whilst most are written in scientific language, that is not easily understood by the laity. There are few gardeners whose plants have not at some time or other suffered from fungous diseases, but as long as the consequences have not been serious they have escaped attention, or been ascribed to accidental causes.

One of the most frequent diseases occurs in seedling plants of almost any kind. The young plants, when still in the seed-bed, blacken, decay, and die off in patches. The disease spreads rapidly from bed to bed, but is often confined to one frame or to one house. This is caused by a parasitic fungus named *Pythium Debaryanum*, Hesse, the minute spores of which are carried about in the air, and are caught by the damp surface

of the seedling stem. There they germinate, pushing a fine tube through the soft and tender skin of the stem. This tube quickly branches, forming a mass of fine threads called "mycelium," or spawn, which penetrate the cells of the seedling, absorbing nutriment and causing death of the young plant. Numerous spores are then produced which quickly spread the disease. This is usually, though somewhat incorrectly, called "damping-off" (it might be more correctly called "black stem") of seedlings, and it is ascribed to an excess of water. Where the beds are kept for a time in a dry condition, the disease often wholly disappears, because the spores require moisture external to the seedlings to enable them to germinate. This disease is consequently favoured by too thick sowing, which prevents light and air from freely reaching the soil. The disease is therefore rarely met with in a bed with "pricked-off" seedlings.

A disease of a similar nature has been observed in different parts near London, where gardeners have had the greatest difficulty in growing Parsley, as the fully-grown leaves are destroyed by a whitish mould. This disease spreads rapidly and for some years, with the result that in some places Parsley can only be grown under glass. Acquaintance with the nature of the injury and with the means of dealing with it would have prevented the reappearance of the disease. On examination of diseased leaves it was found that the injury was caused by a parasitic fungus, *Plasmopara nivea*, Unger, which produces its spores and spreads in the same way as *Pythium*.

Attention may now be called to two very common diseases which greatly trouble Tomato and Cucumber growers, and often described in these columns. The leaves of the Tomatos show brownish spots and dry up, and dark olive-green velvety patches appear on the fruit, rendering them unfit for sale. This is due to an attack of the parasite *Cladosporium fulvum*, of Cooke. The Cucumber-leaves are covered with dry spots, which increase, killing foliage and even the young fruits. This is caused by another parasitic fungus, *Cercospora melonis*, of Cooke. A Cucumber and Tomato grower near London, who was so severely troubled with this disease year after year, calculated his loss at £3,000 each season. Specimens of these two diseases reach us every week.

The diseases mentioned are only too well known to gardeners; how beneficial it would be if methods of prevention of such diseases were equally well known! The loss sustained by them is almost incalculable. In the Wheat harvest of Australia in 1890-91, the loss by "rust" was estimated at £2,500,000; while in Germany in 1891 the injury to Rye, Wheat, and Oats was no less than £20,628,147.

Most of the diseases referred to and similar injuries are caused by parasitic fungi which attack healthy tissues and kill the plants. These are "true" parasites; besides which there are other "semi" parasites, which take possession of wounds. The best example for the last group is *Nectria ditissima*, the canker fungus. It is remarkable that hitherto no experimenter has succeeded in producing this canker by inoculating healthy trees with the spores of *Nectria*. The mycelium of this fungus is present in the injured tissues of the bark

and bast of trees, and prevents the natural process of healing the wound. When the wound is kept free from this fungus, the callous formation would take place and the tree recover. An injury caused by an accident, by carelessness, or frost and other atmospheric conditions supplies a suitable place for the attack of this fungus. Consequently this fungus is not uncommon in newly-grafted plants. Such attack could be effectually prevented by care and proper treatment. By some, however, canker is supposed to be due to bacterial agency.

Observation and practice have suggested a successful preventative against the "black stem of seedlings." When a plant is reared healthily, the first step in the prevention of diseases has been taken. Healthy plants are more capable of resisting fungal attacks than plants that are forced and growing under less favourable conditions. Professor SORAUER, the eminent German fungologist, says that "to keep a plant in health is to prevent the access of disease."

When disease makes its appearance, immediate steps must be taken to combat it. First, the position of the injury should be noted. If it is on a portion which can be cut away without danger to the plant, this should be at once done and every diseased twig or leaf collected and burned so as to kill the spores of the fungus. This measure may not be always practicable, so that fungicides have to be used.

Syringing with a solution of copper sulphate, in the proportion of one pound of copper sulphate to twenty gallons of water, may be adopted. This will arrest the disease, but should be repeated at intervals. Bordeaux-mixture is also largely used, and with good result; but care must be taken that, while the solution is strong enough to kill the parasite, it does not cause any harm to the host. It is advisable also to sprinkle the ground round a diseased tree with the solution employed, to kill the spores in the soil, and so prevent the reappearance of the disease. Every wound due to accidental or natural causes (as frost, hail) should be carefully treated, and painted with coal-tar, or in the case of grafting carefully covered with tree-wax. H. G.

ORCHID NOTES AND GLEANINGS.

LÆLIO CATTLEYA × BLETCHLEYENSIS "MRS. F. WELLESLEY."

GREAT variation both in form and colour is exhibited in the crosses between varieties of *Lælia tenebrosa* and *Cattleya Warscewiczii*, and as is usual in such cases, the very light and the very dark varieties, being the more uncommon, are the favourites with collectors. The new variety "Mrs. F. Wellesley" now flowering with Francis Wellesley, Esq., Westfield, Woking (gr., Mr. Hopkins), is certainly one of the finest of the light-coloured forms, and exceptionally attractive in its colouring. The flower is 7 inches across the petals, which with the sepals are silvery-white, the sepals having a slight pearly-pink shade, and the petals a delicate rose flush, except on the midribs and tips, which are silver-white. The labellum is white on the lower part of the tube and violet-purple on the front lobe, the colour of which passes to light-violet and lavender as it approaches the margin and apex. The base of the lip has light-purple lines, and the central portion two primrose-coloured spots derived from *C. Warscewiczii*. It is a very attractive variety.



FIG. 140.—APPLE COX'S ORANGE PIPPIN: FIRST ON LIST OF DESSERT-APPLES. (SEE P. 315.)

PLANT NOTES.

RONDELETIA SPECIOSA MAJOR.

THIS plant is seldom seen in such good condition as it was some thirty years ago, when it was often shown in collections of stove and greenhouse plants at the principal exhibitions held in the month of August. It is not as a summer

plant that I am now writing of it, but as a plant to flower from Michaelmas until nearly Lady-day. This requires somewhat different treatment. In the first place, the two plants that form the basis of these remarks are set out on the front and back stage respectively, the roots only occupying a limited space of 18 inches square by 6 inches deep, which appears to be ample. Rondeletias

having very fine roots do not require as much root space as do Allamandas, Clerodendrons, and Bougainvilleas. The plants have been in their present position quite fourteen years, merely receiving an annual top-dressing of peat and loam early in April, and weak doses of manure once or twice weekly when in active growth. A temperature of 65° or thereabouts is maintained at night in the plant stove where these are growing from now onwards, and the flowers will not be sprayed with water, although they are liable to damp-much. The plants are pruned annually about the middle of March, and are cut rather hard yet they start freely into growth and produce panicles of lovely orange-scarlet coloured flowers at almost every shoot. After these central flowers are past new shoots start and eventually flower. Rondeletias are not greatly subject to attacks from insects. Mealy bug will sometimes gain a footing, but does not feel at home on the plants, especially should there be any Ixoras near. Unfortunately the flowers when cut do not keep fresh long, but by peeling off the bark at the base before placing them in water, this drooping may be averted. *J. Mayne, Bickton Gardens, Devonshire.* [Our correspondent enclosed a spray of these brightly-coloured flowers in excellent condition and of unusual size. Ed.]

DESSERT-APPLES.

IN our previous number, while alluding to kitchen-Apples, we explained in what manner our information had been gleaned from observers in all parts of the country, and we indicated very briefly the main inferences to be drawn from the tables. It is, therefore, not necessary to repeat what has been said before. We may, however, add that, whilst other lists have been based only upon the number of times particular varieties have been shown on this or that exhibition table, our present census is derived from experience in the garden and the orchard, the kitchen or the dessert-table, without special reference to display at the fruit shows.

Turning now to the question—What are the best six dessert-Apples for general purposes? we think the question is very decidedly answered by the following enumeration:—

Out of 102 varieties reported on by 196 voters, distributed throughout the entire kingdom:—

1. COX'S ORANGE PIPPIN heads the list (with 162 votes).
2. KING OF THE PIPPINS (127).
3. WORCESTER PEARMAIN (100).
4. RIBSTON PIPPIN (93).
5. BLENHEIM ORANGE (70).
6. IRISH PEACH (61).

A glance at the table will show not only that these varieties find the most favour with a very large number of growers, but also that the preference is not confined to one district, but is very general. There is a great drop from the last on the list with 61 votes to the next with 41—our schoolboy favourite, Devonshire Quarrenden. After this the numbers tail off very rapidly, and many excellent Apples seem only suitable for particular localities, or are not yet sufficiently known.

The inferences to be drawn from the tables are numerous and varied, but the arrangement is such that those who consult them can easily form their own opinions.

We have only to add the cordial thanks of our readers to those correspondents who have supplied these valuable lists.



FIG. 141.—APPLE KING OF THE PIPPINS: SECOND ON LIST OF DESSERT APPLES. (SEE P. 315.)

THE MOST SUITABLE APPLES FOR PARTICULAR DISTRICTS. (SEE ALSO P. 298.)

DESSERT-APPLES. Total Number of Varieties mentioned—102.	Scotland, E. No. of Returns 14	Scotland, W. No. of Returns 13	England, N.E. No. of Returns 15	England, E. No. of Returns 10	England, Midland Counties. No. of Returns 42	England, Southern Counties. No. of Returns 43	England, S.W. No. of Returns 4	England, S.W. No. of Returns 24	Wales, No. of Returns 12	Ireland, N. No. of Returns 8	Ireland, S. No. of Returns 6	Channel Islands. No. of Returns 3	Isle of Man. No. of Returns 2	Total No. of Returns 196
														Total Votes
Adams's Pearmain ...		3			7	7		3	3			1		24
Allen's Everlasting...								5	1					2
Allington Pippin ...	2	1	1	1	6	7		2	2	1				27
American Mother ...		1	1		2	10		6		1				21
Annie Elizabeth ...					1						1			2
Ashmead's Kernel ...								1						1
Autumn Pearmain ...			1											1
Barchard's Seedling ...					1									1
Barnaack Beauty ...					1									1
Baumann's Red Winter Reinette						2		1						3
Beauty of Bath ...	2	3		1	5	2	1	3	3		3			23
Beauty of Kent ...	1													1
Beebech, local at Wore, Staffs...					1									1
Benn's Red ...											1			1
Benoni ...												1		1
Bess Pool ...				1										1
Blenheim Orange ...	2	1	2	6	19	19	1	9	5	3	2	1		70
Boston Russet ...								1						1
Braddick's Nonpareil ...	1			1	1	1		1						5
Brownlee's Russet ...					1	1		1						3
Cellini ...		1						1						2
Charlestown Pippin ...			2											2
Claygate Pearmain ...		1	1	1	2	7		2	1	2				17
Cockle's Pippin ...					2	3								5
Colonel Vaughan ...	1								1		1			3
Cornish Gilliflower ...								2						2
Countess Cowper, local West, Beds.					1									1
Court of Wick ...		1			3									2
Court Pendu Plat ...				2	1		2	2	1		1			14
Cox's Orange Pippin ...	6	3	12	9	38	42	2	22	10	5	4	3	1	162
Cox's Pomona ...			2	2				1	1					4
D'Arcy's Spice ...				1										1
Devonshire Quarrenden ...	3	3	1	2	12	5	1	6	1	2	1	2	2	41
Duchess's Favourite ...					1	1								2
Duchess of Oldenburgh ...	1	2	1	1	2	1		2			1		1	12
Duke of Devonshire ...	3				1	2		1		1				3
Dutch Mignonne ...					1	1		1	1					4
Early Harvest ...	1								2					3
Early Margaret ...			1											1
Egremont Russet ...						1								1
Fearn's Pippin ...			1	1	3	3	2		2	1				13
Gascoyne's Scarlet Seedling ...	1	1		1	1	1		1			3			8
Golden Pippin ...			2		1	1				1				6
Golden Reinette ...			1	1	1									3
Golden Russet ...						1								1
Golden Spire ...										1				1
Golden Winter Pearmain...	1													1
Gravenstein ...					1	2								3
Hoary Morning ...								1						1
Hubbard's Pearmain ...											1			1
Irish Peach ...	3	3	11	2	10	7	2	3	1	4	1	2	2	61
James Grieve ...	5	3	1	1	2	3		1		1				17
Jefferson ...			1											1
July Pippin ...		1												1
Kerry Pippin ...	4	5	3	1	5	4	1	2	1	1				27
King of the Pippins ...	5	7	6	7	27	33	2	17	11	4	4	2	2	127
King of Tompkins County ...	1			1				2						4
Lady Henniker ...											1			1
Lady Sudeley ...	3		4	1	11	11		4	2		2			38
Lenon Pippin ...		1		1										2
Lord Burghley ...			4		1	1								6
Mabbott's Pearmain ...						2		1						3
Maltster ...							1			1				2
Mannington's Pearmain ...			2		2	7	1	2						14
Margil ...			2		9	1		1			1			14
May Queen ...						1								1
Melon Apple ...												1		1
Mr. Gladstone ...	4	2	2	1	5	3	1	3	4	2			2	29
Newton Wonder ...	1													1
Newtown Pippin ...	1	1			1									3
Northern Spy ...			1			1							1	3
Orange Pearmain ...					1									1
Oslin ...	2	1												3
Peasgood's Nonesuch ...					1					1				2
Peter Grieve ...	1													1
Pineapple Pippin ...								1						1
Pineapple Russet ...								1						1
Red Astrachan ...	1		2		3				1					7
Reinette de Canada...					1		1							2
Ribston Pippin ...	6	5	11	6	20	18	1	10	8	3	2	2	1	93
Rivers' Early Peach ...					1									1
Rosemary Russet ...					1	2								3
St. Edmund's ...						1								1
Scarlet Golden Pippin ...		1				1		1						3
Scarlet Nonpareil ...		3		1	2	5	1		1	2				15
Scarlet Pearmain ...														1
Sops-in-Wine ...								1	1					1
Strawberry Pippin ...											1			1
Sturmer Pippin ...	2		1	1	9	6	1	7	2	1	1			31
Summer Golden Pippin ...			1											1
The Queen ...			1							1	1			3
Warner's King ...					2									2
Washington ...						2								2
Wealthy ...				1	1							1		3
White Juncating ...		1	1		1									3
White Paradise ...	1													1
White Transparent ...					1									1
Whorle Pippin ...	2	1												3
Williams' Favourite ...											1			1
Worcester Pearmain ...	9	10	7	6	20	17	4	13	5	6	3			100
Wyken Pippin ...	1		1		3		1		1					7
Yellow Jugestrie ...						1		2		1				4

KEW NOTES.

CÆLOGYNE PANDURATA. — This handsome Bornean species is now flowering in the warm Orchid-house. The individual flowers are about 3 inches in diameter, having bright pale-green sepals and petals; the lip is also of the same green colour, and marked with broad black crests. It is a stove species, and succeeds well when grown in teak-baskets, in a compost of peat, sphagnum-moss, and Belgian leaf-soil. It was figured in the *Botanical Magazine*, t. 5084. W. H.

KLEINIA (SENECIO) GALPINI, HOOK.

A few plants of this charming S. African succulent Composite are flowering in No. 7 in the T

Use a compost of loam, leaf-mould and sand in equal parts, for the cutting pots, and place the pots in a fairly dry, well ventilated position. Very little water is required until the cuttings have made roots, and at no time should the soil be permitted to remain wet for any length of time. When the plants have made sufficient roots shift them into large "60's" or small "48's," using a coarse open compost. Grown in this manner they make pretty plants for table decoration and for conservatory furnishing. With careful handling the old plants may be grown on for several years until they occupy 10 or 12-inch pans. Figured in *Botanical Magazine*, t. 7239. W. H. [This species was illustrated in *Gardeners'*

FOREIGN CORRESPONDENCE.

HYBRID YUCCAS.

I THINK that Yuccas might be induced to flower every year, even if the temperature were not so high as it has been this year, if Sprenger's new hybrids were more widely grown. These are crosses between *filamentosa* and *flaccida* as seed-bearers, with *gloriosa*, *recurvata* and *flexilis* forms as pollen parents. They are all very floriferous. In Mr. Ch. Sprenger's Yucca-garden at Vomero, Naples, I have observed more than one variety in which the same plant, after flowering in May or June, has branched out into four or five heads, and these have all flowered well in the autumn. Though this is not, perhaps, possible in the British climate, still it is a sign of the very free-flowering property of these hybrids. In 3-inch pots also they bear flower-stems, and this is certainly an advantage to wholesale growers. These hybrids are stemless, like *filamentosa*, or have a short stem not nearly so tall as *recurvata*. The diversity of the colours and structure of the foliage is surprising: nearly as white as *Gnaphalium* in *Yucca imperialis*, dark and glaucous in *Y. cerulescens*, deep green in *Y. Sauderiana*, and varying from the stiff, erect leaves of *Y. Ava* to the elegant, recurved foliage of *Y. Wittmackiana*, filiferous, or without any threads on the margin. *Y. paradoxa* is a very striking plant, with a short stem and very plicate, contorted, erect leaves. The flower-stem is sometimes red or dark brown or green in *Y. magnifica*, the flowering branches start from near the base in *Y. Willmottiana*, halfway up and in the upper part of the stem in *Y. Guglielmi*; the inflorescence is dense and cylindrical in *Y. columnaris*, or a deltoid, thyrsoid panicle in *Y. peregrina*; *Y. Treleasei* has drooping, pendulous branches with red bracts. The colours also vary from the green *Y. viridiflora* and the light green *Y. virescens*, to the creamy *Y. micans* and the snow-white and very fine *Y. Rekowskyana*. The form is campanulate in *Y. tulipifera* and *Y. adenophora*, or widely open in *Y. formosa*. *Y. purpurascens* has white flowers, but the flower-stem, branches, bracts, and buds are purplish-brown. In May and June, when the Yucca-field is in flower, there is a continuous succession of visitors, especially in the evening, to admire these beautiful blossoms. William Müller, Naples.

BULB GARDEN.

MONTBRETIAS.

THE advent of Germania has been followed by many additions of much beauty to this valuable group of hardy bulbs. Some of these are proving very satisfactory as border plants, though older kinds, such as *Feu-d'artifice*, *Sulphurea*, *Eldorado*, and others, will no doubt not be lightly discarded. Quite a nice clump of *Brilliant*, of about two dozen plants, though hardly so bright as one would wish it, produces a tone distinct from anything we yet have had. Its great value consists in the back of the sepals as well as the front portion being of exactly the same shade. It is a good medium height, and is an early variety, just a few days later than *Volean*. Half-a-dozen spikes of *Anneau d'Or*, the first flowers on which did not open till September 4, attracted much attention. The flowers are about 3 inches across, of an orange shade, with a maroon ring, enclosing a yellow centre. This is a very attractive variety. In *Aureole* we gain a large star-formed flower, with the greater part of the petals yellow, the centre being straw-coloured with dark blotches, a variety likely to gain many admirers. *Messidor* was distributed as approaching to white; it is really a very light-toned yellow, quite distinct and very beautiful plant of dwarf habit, and one of the first to



FIG. 142.—APPLE WORCESTER PEARMAIN: THIRD ON LIST OF DESSERT-APPLES.
(SEE P. 315.)

range. They are of dwarf and compact habit of growth, having fleshy leaves 3 to 4 inches in length and 1 inch wide in the broadest part. From the centre of the stems arises a stout, often branched, leafy peduncle, having usually three semi-globular heads of flowers, 1½ inch in diameter, consisting of closely packed, bright-orange-coloured, tubular florets, with spreading corolla lobes, giving each floret a stellate form. The plants are usually about 9 inches high from the top of the pot to the top of the inflorescence. The species is easily propagated from cuttings obtained from growths which are produced freely after the flowering stage. These cuttings should be inserted singly in 3-inch pots in March or April, selecting those having about an inch of stem. Being of a soft fleshy nature the cuttings would be likely to damp off if placed together in pans.

Chronicle for March 9, 1895, from a specimen which flowered in the Cape-house at Kew in the previous year. See also note by W. W. in the same issue. Ed.]

PLANT PORTRAITS.

CERASUS SERRULATA ROSEA PLENA, a very beautiful flowering Cherry, allied to but differing from *Waterer's Cherry*.—*Revue Horticole*, September 16.

PHAIUS × *MARTHE*, a cross between *P. Blumei* and *P. tuberosus* (*simulans*).—*Gartenflora*, t. 1530, September.

ROSE FRAU PETER LAMBERT, H.T.—*Journal des Roses*, July. A seedling from Kaiserin Augusta Victoria.

ROSE RUHM DER GARTENWELT.—*Moniteur d'Horticulture*, September 10. H.T., crimson, said to have originated by crossing *American Beauty* with *Francois Dubreuil*.

flower. This no doubt will prove a most popular plant for massing, being good in every way. Toison d'Or is now no novelty, but its brilliant yellow flower and tall, erect habit will secure the affection of those who are on the look-out for a striking border plant. In *Tragédie* the spikes are tall, much branched, the flowers of the largest dimensions, opening fully to view, and a nice shade of light-orange with a striking central ring of a dark-brown. The foliage is fine and the stems long, both features that have to be taken into account. *Incandescent* is worth growing for its late blooming. The spikes are long, with very large flowers, much like *crocosmaeflora* in colouring. *Lothario* is also a late-flowering variety, yellow and large flowers, which are produced most abundantly. These are all sorts well worth introducing into gardens where the beauty of *Montbretias* are appreciated; but it must be said they ought not to be treated in the haphazard manner one often sees them, but transplanted annually, dividing out the corms, and in light soils adding a heavy dressing of rotted manure, while in those of a strong holding texture an abundant application of leaf-soil will go far to keep the plants from dwindling, as they are apt to do. For pot-culture all the varieties named are suitable, and provide a feature of no little beauty in the greenhouse. *B.*

NOTICES OF BOOKS.

THE TIMBERS OF COMMERCE AND THEIR IDENTIFICATION. By Herbert Stone, F.L.S. (Rider & Son, London.)

Most assuredly there was need for such a volume as that before us. Popular names are bad enough in a general way, but we do not think in any other department of knowledge they offer so many obstructions and stumbling-blocks as in the case of timbers. A glance at the index to the present volume will show that there are more than a dozen rose-woods so called, not one of which is the wood of a Rose; some thirty "Cedars," not one of which has any right to the name; sixteen box-woods are known in the markets, only one of which is a *Buxus*; and similar remarks apply to Ashes, Beeches, Ebony, Elm, Lace-bark, Mahogany, Satin-wood, Yellow-wood, and to very many others. When we meet with a "popular" name as applied to a specimen of timber, it is almost certain to be misleading when not incorrect. It is unfortunate also that in the majority of instances there are no means of knowing what tree really supplied the timber. Foresters in India and the Colonies might follow the example of Brandis and Gamble, and render great assistance in this way by sending home specimens of the foliage, flowers, and fruit, together with small samples of the wood, so that identification could be made. In many cases this is still not practicable, but where no insurmountable obstacles stand in the way, it is the bounden duty of the forester to supply means of determining the trees which furnish timber, or indeed any economic product. Comparative investigation of the structure of the wood is rendered almost useless if the name of the tree is not known with certainty. The present work will be most valuable to the student of timber. After some introductory remarks on the nature and growth of timber generally, details are given concerning the methods of examining its structure by the simple or compound microscope, and of displaying it on the screen by the aid of a lantern. Then follows a detailed description of nearly 250 timbers, which are referred to their natural orders. Synonyms are given, and sources of supply indicated. Physical and anatomical characters are detailed; the uses to which the timber is put are mentioned, and reference made to the standard books, American,

German, or English, in which the timber is described, and wherein further details may be found. In addition, nearly 200 photographic reproductions are given, showing the structure of the wood. An extensive bibliography and a copious index complete a volume encyclopaedic in its character, were it not for the absence of detail concerning the specific gravity, breaking strain, and a few other points which were designedly omitted. The publication of Dr. Russell's curious experiments showing the effect of wood sections on a photographic plate kept in the dark was subsequent to the issue of this volume. No doubt in a future edition attention will be given to these very curious and important phenomena, which bid fair to be not only of scientific value, but of great practical importance.

Lily of the Valley.—Plants in beds that have become crowded should be taken up and the crowns sorted into three sizes, of which the largest size should be used for potting purposes, the second size for planting again in the beds, and the smaller crowns in the nursery ground, to develop into a suitable size for planting next season in beds or borders. The beds should be not more than 5 feet in width, in order that the flowers may be gathered without treading on the crowns. A distance of 18 inches will suffice between the individual rows, four rows being sufficient for a 5-foot-wide bed. If the crowns are to be placed back in the same beds, the ground should be deeply dug, incorporating with it at the same time plenty of rotten dung. While the ground is being prepared, see that the roots do not get dry. The beds should be raised 3 or 4 inches above the alleys, especially if in a



FIG. 143.—APPLE RIBSTON PIPPIN: FOURTH ON LIST OF DESSERT-APPLES. (SEE P. 315.)

The Week's Work.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Cannas.—These should be lifted when the foliage is dry and placed in ashes in a frost-proof frame or shed. They should not be kept in too dark a situation until the foliage dies down. It is advisable to go over the plants occasionally and remove any decaying foliage, which would otherwise injure the crowns. The roots should not be allowed to get too dry during the winter.

Lobelia cardinalis.—Remove the old flower-spikes and place the crowns in a frame where the frost can be excluded on a hard ash-bottom with some old potting-soil. These plants can be readily increased in the spring from the young off-sets that are now developing.

damp, cold situation. When planting, take out a shallow trench with the spade but deep enough to allow the roots to be well covered, for which purpose old potting soil is admirable. When planting is finished, a slight mulching of horse-droppings may be applied. The crowns selected for pot-culture may be exposed to frost. Only a few of the beds should be disturbed at one time. Established beds should be cleaned over and given some fresh soil for a top-dressing.

Mixed Flower Borders.—Plants of *Helleborus* to give best results require a little protection; a hand-light placed over them now will ensure brighter and better flowers later. These plants should not be disturbed oftener than is necessary. Aconites and Snowdrops should be planted in big clumps at the front of the border. Late-sown annuals are still blooming, there being good beds of *Mignonette* "Thatchett" and the common sweet-scented variety even now. Irises should be planted in clumps. Care should

be taken in planting not to disturb any bulbs or dormant plants; if careful labelling has been done this will easily be avoidable. Hardy Orchids may be given a place in the border; they are very popular just now. Some kinds require peat, others loam; while most of them require a little shade, there being few species that enjoy a sunny position; the varieties of hardy Orchids are very numerous. Pæonies may now be divided; they require plenty of good peat and loam, especially the Montan varieties. Primulas should be parted, and a little fresh soil given round the roots. Early-flowering Chrysanthemums should be cut down, and a few ashes placed round the plants. Hollyhocks, Pyrethrums, and Phlox may be

will last two or three weeks in good condition; some of them will continue to send out flowers for several months in succession. Large specimens may be divided and made up into plants of various sizes, according to the requirements of the cultivator. Small well-rooted subjects and moderate-sized specimens will require pots 2 inches larger than those they now occupy. Put plenty of drainage-materials into each pot, and pot firmly with fibrous peat, loam, and sphagnum-moss in equal parts, adding some small crocks or broken pieces of brick. When preparing the compost, use only the rough fibre of the loam, and mix it thoroughly well with the peat before adding the moss, &c. After repotting, afford

sizes larger. The pots should be provided with efficient drainage, and the compost should consist mainly of black sandy peat, to which may be added some chopped sphagnum moss and broken crocks, or small pieces of limestone. Place the plants in the cool-house, and keep the surface of the compost just moist until there are numerous roots, then the supply should be gradually increased, and a few heads of living sphagnum pricked in over the surface of the compost so that an equable degree of moisture about the roots and growths may be maintained. Should thrips or green-fly attack the new shoots, they must be immediately destroyed or the plants will soon decline in vigour.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Cyclamen—If seeds were sown at the end of July or early in August the seedlings will now be ready to be pricked off into paus or potted singly into thumb-pots. They should then be placed as near to the light as possible in a pit or house where a moist atmosphere can be maintained, and a temperature of from 50° to 55°. A suitable compost for Cyclamen may consist of three parts loam, one part leaf-soil, and some silver sand. Cyclamens are among those plants which are frequently much injured by mites, and upon the first signs of a rusty appearance on the leaf-stalks, or of crippled and contracted leaves, the plants should be dipped in tobacco-water or sprayed with "Spidacide" two or three times at intervals of two days. An atmospheric temperature of from 45° to 50° will be sufficiently high for older plants, which will soon flower, unless it is desired to hasten them, in which case the temperature may be 5° higher. The plants must, however, be kept near to the roof-glass, otherwise the leaves and the flower-stems will become weak and "drawn."

Herbaceous Calceolarias.—In order to have healthy and vigorous plants, it is essential that their requirements be promptly met. To keep them growing steadily and strongly they should neither be repotted too soon nor too late, but just when the roots have well occupied the soil of the previous potting. The proper time can always be determined by examination. The plants should not be afforded too large a shift at one time, otherwise when they arrive at the flowering stage they will be in disproportionately large pots. A pit with a pipe running through it, into which hot-water can be turned during frosty weather, or to expel the superfluous moisture when necessary, will suit Calceolarias well; or failing this, the plants may be placed on a shelf in the greenhouse. Artificial heat should only to be resorted to during frost, and even then only to the extent of maintaining a temperature of between 35° and 40°. If it were not for the great condensation of moisture upon the leaves of the plants that takes place in cold pits during frosty weather, when the lights have to be closely covered, they might be grown without the aid of fire-heat. Ventilation, little or much, must be afforded according to the atmospheric temperature out of doors. Grown in this way the plants will be sturdy and hardy and will be but little troubled with aphids during the winter. With the return of the warmer days of spring mites are sure to make their appearance, and it will be necessary to treat the plants to frequent fumigations, otherwise they will be ruined. A suitable compost for herbaceous Calceolarias is one consisting of three parts loam, half a part leaf-soil and half a part well rotted manure. If extra large specimens are required, pinch out the flower-spikes as soon as they appear, and shift the plants into pots a size larger; this will cause the plants to be a fortnight later in coming into flower.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Raspberries are sometimes allowed to occupy the same position for a great number of years, and if the site and soil are good and the beds were thoroughly made at the commencement, then an annual top-dressing suffices to keep the canes in a good bearing condition. If any beds are



FIG. 144.—APPLE BLENHEIM ORANGE: FIFTH ON LIST OF DESSERT-APPLES.
(SEE P. 315.)

treated in the same way. *Physalis Alkekengi* and *Francheti*, when cut and dried, will be useful for decoration in winter. Everlasting Flowers may be used for the same purpose.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor LAWRENCE, Bart., Burford, Dorking.

Cypripediums.—Such species and varieties as *C. Sedeni*, *C. S. candidulum*, *C. calurum*, *C. cardinale*, *C. Dominicanum*, *C. leucorrhodum*, *C. grande*, *C. macrochilum*, *C. porphyreum*, *C. longifolium*, *C. Roezii*, *C. albo-purpureum*, and others of this section may be repotted if necessary. These strong-growing *Cypripediums* frequently suffer injury from being kept in a pot-bound condition. In order to obtain good specimens and plenty of well-developed flowers, the plants must be given liberal treatment in every respect. Under good culture the scapes produce fine flowers, which

moderate supplies of water, but when well established give the plants a thorough soaking every four or five days, as these *Cypripediums* must not be allowed to become dry. A shady position in the East India-house, or plant-stove will suit them admirably.

Disas.—*D. grandiflora*, *D. racemosa*, and the hybrids *Veitchii*, *langleyensis*, *kewensis*, *Premier*, &c., are now sending up their young shoots, and will require to be repotted or top-dressed. When breaking up large crowded masses of these plants, great care is needed, or many of the roots, which are extremely brittle, will be destroyed. In re-making up the specimens, select growths of uniform size, and put them together, so that they may all flower at the same time. Where space is of little consequence, it is a good plan to pot the strongest growths singly, using 4½-inch pots, then after the plants have made some progress and are rooting freely, they may be transferred with but little root disturbance into pots three

showing signs of weakness, it will be best to renew them, and to plant-out strong healthy young suckers having fibrous roots. The young canes may be planted 6 in. apart in the lines, and the lines should be from 4 to 6 feet distant from each other, according to the strength of the variety. Land for this purpose should be well trenched, and supplied with sufficient manure, mixing this amongst the soil as the work of trenching proceeds. The exact quantity of manure to be applied will depend on the nature and condition of the land. Another method of planting is to set out the canes in clumps of threes, 4 feet apart, and to train the canes to stakes, or arch them over from right to left. The variety Superlative is one of the best croppers, and the fruits are large in size and of good flavour.

Permanent Beds.—Assuming that the young canes were duly thinned out and the old fruiting canes removed after they had finished bearing, it will be necessary to tie those that remain for fruiting next year to the wires or stakes. Let the ties be made of soft tar yarn, and do not tie them too tightly or they may get broken by the wind. Do not shorten the canes until the month of March.

Nuts, Storing.—After these have partly dried in an airy room, they should be wintered in a rather moist place. I have kept Cobs in barrels in a cool cellar for several months, and the kernels have remained quite plump and fresh. They must be stored in a position where mice and rats cannot reach them.

Walnuts.—These generally ripen in October, and should be knocked down and stored on the floor in a dry shed until the green husks will part with ease from the shell, when the nuts may be cleaned and taken to some place where the atmosphere is not dry enough to cause them to shrivel.

Work in Wet Weather.—There is at all times plenty of work that can be done under cover, such as the preparing of shreds, making or preparing of labels, pegs, &c. Nets should be neatly packed away in a dry shed until they are wanted in spring. Keep a sharp look-out for bad fruits in the fruit-room, as the fungus from one rotten Apple will soon spread to others. All late-keeping Apples should be kept together and be handled as little as possible.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Peas.—If the ground was got ready for Peas as was advised in a previous Calendar, the recent dry weather has probably brought it into a good condition for being worked into a fine tilth. In most districts a sowing should be made now whilst the soil is still warm, as the seeds will thereby be given a much better chance of success than if the sowing was delayed until the ground becomes sodden with wet and the temperature lowered by frosts. The colder and wetter the district the sooner should the sowings be made, as failure more often results from the seeds rotting in the soil through being sown late than from being injured by frost after getting through the ground. In some of the warmer southern counties, however, if the seeds are sown too early and several weeks of fine weather follow, the plants make more growth than is desirable, and although they generally survive the winter, I have seen them in cases where ample protection was not afforded, succumb to the cutting winds of March. In such districts the sowing should be deferred for a fortnight. When sowing early on wet or heavy land I prefer to keep the seeds very near to the surface of the ground. Stretch the line where the row is to be made, and make the soil fine and level by the side of the line. Then sow the seeds and cover them by drawing the soil from the side with a hoe or rake, making it fine as the work proceeds. Then apply a dressing $\frac{1}{2}$ inch deep of sifted coal-ashes, and if the ground is in a dry condition, beat it with the back of a spade to make it moderately firm, leaving the little ridge thus formed round and smooth on the surface, so that it will afford no resting-places for slugs.

Peas in Frames.—Where pits and frames are available in which to sow seeds of dwarf-growing Peas, provide a sufficient quantity of rich soil to so far fill the frame that there will be only sufficient space between the surface of the soil and the roof-glass to accommodate the haulm of the Peas. If the structure is provided with water pipes, it will be easy, by the exercise of ordinary judgment in the matters of temperature and ventilation, to obtain success. If only cold frames can be employed, the work will be less easy, because you cannot regulate the temperature so precisely. If seeds are sown in cold frames now, the frames should be kept quite open except during heavy rains, hard frosts, or snow. There is great danger in leaving the lights closed for any length of time during mild weather, because the haulms would be drawn up weakly in the first stages of growth, and therefore rendered less able to withstand subsequent hard frost and dark weather. The advantage of having Peas established in cold frames is that they will make good progress during the early spring months, when the outside temperature is rising and the days are lengthening. Select well-known varieties that are specially hardy, and in well-sheltered gardens having a sandy soil, sow both early and second early varieties in a position facing to the south.

should be done with moderation; what little is practised should be effected during the day, giving the Vine rest at night.

Pines.—Houses containing young plants should be liberally ventilated at every favourable opportunity. About every ten days examine the plants, and water those that require it, not allowing the roots to become very dry. Fruiting plants should be given a temperature at night of 70°. In severe weather a few degrees below this temperature will be sufficient. Should suckers appear before the fruit on successional plants, they should be removed, unless the stock is short, and then only the best sucker on each plant should be retained. Give attention to beds of fermenting material, and in places where tan is not employed Oak and Beech-leaves should now be collected in sufficient quantities for the purpose. In making the hot-beds, press the material together firmly, the heat will then last much longer.

Figs that are ripening should be given all the light possible, with free ventilation, and during the day plenty of artificial heat, maintaining a temperature at night of 65°. Keep the atmosphere of the house moderately dry. Brown Turkey is a most reliable variety for fruiting at this season.



FIG. 145.—APPLE IRISH PEACH: SIXTH ON LIST OF DESSERT-APPLES.
(SEE P. 315.)

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Pot Vines.—The practice of obtaining the earliest crop of Grapes from pot Vines has much to commend itself to growers, especially where small lean-to Melon or Tomato-houses are available for the purpose. A suitable bed of Oak or Beech leaves should be provided, from which a bottom heat of 70° to 75° can be maintained. It is advisable to erect brick pedestals, and cover them with a layer of good fibrous turves, on which to stand the pots. The sods should be enriched with a suitable dressing, so that when the roots emerge from the pots they may benefit from this additional supply of food. The drainage holes of the pots may be enlarged to further the escape of the roots. Any surface soil in the pots not filled with roots should be removed and replaced with fresh loam, intermixed with chemical Vine-manure. In the early stages of Vine-culture in pots, and before the roots become active, too much water must not be applied to the roots, but later, when they are making growth freely and the roots are active, liberal supplies are necessary to ensure success. It is advantageous both to the foliage and also to the fruit of early, mid-season, and late Grapes, to allow not less than 2 feet between the rods and the glass—too close contact with the cold glass in the early stages of forcing, and to the hot glass later in the season may be considerably modified by placing the Vines at this distance from the glass. Early forcing before Christmas

THE APIARY.

By EXPERT.

Bee-pests.—The chief pest now causing anxiety to bee-keepers is that of foul brood. The business man who keeps bees for profit and the selling of honey and swarms, the only income he has being derived from this source, may have laid out a considerable sum of money to buy his stocks of bees and appliances, and have been very careful in the selection of his bees. He may have ascertained that they were free from this dreadful pest, and if he did not himself understand it, he may have called in an expert in his neighbourhood or written to his county association for its advice. Having done all he could possibly do, it is very hard indeed if his neighbour does not take proper care to keep his bees free from foul brood, because the consequences are obvious, as no one can prevent bees in the spring and autumn from robbing from each other in some degree. Legislation may be necessary in this matter, but we trust that whatever is done it will be for the benefit of our industry, and further help us to raise more honey to supply our own needs, and therefore become less dependent on the foreigner each year.

BOOKS RECEIVED.—The following books have been received by us, and will receive more detailed notice as space permits:—*A treatise on the British Freshwater Algae*, by G. S. West (Cambridge; at the University Press).—*English Estate Forestry*, by A. C. Forbes (London: Edward Arnold, 41 and 43, Maddox Street, Bond Street).—*Flora of Hampshire including the Isle of Wight*, by Frederick Townsend, new edition (London: Lovell Reeve & Co., Ltd., 6, Henrietta Street, Covent Garden).

APPOINTMENTS FOR THE ENSUING WEEK.

SUNDAY,	NOV. 6	{ Exhibition of Chrysanthemums and Plants at Ghent, Belgium (3 days). Rugby Chrysanthemum Show. Birmingham Chrysanthemum Show (3 days). Oxford Chrysanthemum Show. Ulster Chrysanthemum Show, Belfast (2 days).
TUESDAY,	NOV. 8	{ Ipswich and East of England Chrysanthemum Show (2 days). Dorchester Chrysanthemum Show (2 days). St. Neots Chrysanthemum Show. Devizes Chrysanthemum Show. Royal Botanic Soc. Exhibition, Gainsborough Chrysanthemum Show (2 days). Buxton and District Chrys. Sh. South Shields Chrysanthemum Show (2 days). Ascot and District Chrysanthemum Exhibition (2 days). Putney and District Chrysanthemum Exhibition (2 days).
WEDNESDAY,	NOV. 9	
THURSDAY,	NOV. 10	{ Colchester Chrysanthemum Show. Devon and Exeter Horticultural Exhibition, Exeter (2 days). Bradford Chrysanthemum Show (2 days). Shrewsbury Chrysanthemum Show. Leicester Chrysanthemum Show (2 days). Stockport Chrysanthemum Show (2 days). Sheffield Chrysanthemum Show (2 days). Nottingham and Notts Chrysanthemum Show (2 days). Huddersfield Chrysanthemum Show (2 days).
FRIDAY,	NOV. 11	

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY and WEDNESDAY NEXT—
Sales of Bulbs and Plants, at Stevens's Rooms, 38, King Street, Covent Garden, at 12.30.
MONDAY NEXT—
Important Clearance Sale of Nursery Stock, at Hassocks Nursery, Hassocks, by order of Messrs. Balchin & Sons, by Protheroe & Morris, at 12. Four days.
WEDNESDAY NEXT—
Ornamental and Decorative Palms, Plants, &c., from Belgium, at Protheroe & Morris' Rooms, at 5.
THURSDAY NEXT—
Great sale of 2,775 cases of Japanese Lilioms, 37,500 Lily of the Valley crowns, 10,000 Azaleas, 11,200 Narcissus, and 480,000 Palm Seeds, at Protheroe & Morris' Rooms, at 1.
FRIDAY NEXT—
An importation of *Odontoglossum crispum*, also Established Orchids, at Protheroe & Morris' Rooms, at 12.30.—Clearance sale of 30,000 well-grown Fruit Trees and other stock, at Platt Nurseries, Borough Green, near Wrotham, by order of Mr. J. W. Todman, by Protheroe & Morris, at 11.30.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —43°5.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 2 (6 P.M.): Max. 53°; Min. 47°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 3 (10 A.M.): Bar., 30°3; Temp., 51°. Weather—Fine.

PROVINCES.—Wednesday, Nov. 2 (6 P.M.): Max. 52°, West Coast of England; Min. 48°, North of Scotland.

It was quite refreshing, after endeavouring as we have done for many years to induce planters to pay more attention to trees and shrubs, to hear Mr. VICARY GIBBS'S lecture on the subject at the Royal Horticultural Society on Tuesday last. As we have often pointed out, there really is no necessity to confine ourselves so exclusively to common Laurels and Pontic Rhododendrons. Mr. GIBBS devoted his attention more particularly to those shrubs and trees which force themselves on our attention by reason of their splendid autumnal colouration. The list he gave showed how thoroughly he had investigated the subject, and few indeed are the names that we should have to add to this list. The very first one

he mentioned, *Pyrus arbutifolia*, is one of the most splendid. Indeed, on one occasion when we were examining an arboretum expressly for the purpose of picking out which were the most brilliantly coloured, this species stood before all the rest in its glowing magnificence; and yet how very rarely we see it! Amongst the numbers which are submitted to us at this season for name, it is rare to find this one. We have no space to follow Mr. GIBBS'S enumeration, but we may endorse some of his recommendations, such as the desirability of planting in masses of one variety, and of cutting the shrubs hard back in spring, even to the ground-level, if brilliant colouration be desired. Only in this way, for instance, can the brilliant colouration of the Golden Elder be produced. Again, it is necessary that this particular shrub be allowed to grow in the open and not under the shade of trees. The Purple Nut, on the other hand, retains its colour fairly well in the shade. Before we leave the Golden Elder, it is as well to point out that it is a variety not of the common Elder, but of its Canadian relative *Sambucus canadensis*. Mr. GIBBS enumerated many well known and a considerable proportion of less familiar trees and shrubs, and concluded his lecture by giving a list of a few common herbaceous plants noticeable for their stately appearance, amongst others, *Oreocome Candollei*, which he praised as one of the most elegant of plants to be grown in the vicinity of water. Mr. GIBBS is not insensible to the majestic form of what some people would call a weed—*Rumex hydrolapathum*. Indeed, he seemed to fear that his hearers might think him guilty of exaggeration, an accusation not likely to be made by those who know. In this connection he told a story of someone who remarked to TURNER that he (the speaker) never saw such colours as the painter depicted. "Don't you wish you could?" was the reply. But those who have seen a Beech wood at this season, or even those who saw the magnificent collections of Captain Holford at a recent meeting of the Royal Horticultural Society, and that set up by Mr. Gibbs himself on this occasion, are not likely to accuse him of exaggeration, but will rather be disposed to express their gratitude to him for calling their attention to such a wealth of beauty.

Chrysanthemums at the Exhibitions.

Now that the Chrysanthemum season is once again at its height, the attention of cultivators and exhibitors alike is directed to the novelties that are forthcoming, and that are likely to be seen later on. The development of the Japanese Chrysanthemum during the past twenty years has been both interesting and remarkable, and it is probable that the enthusiasm that growers and the public alike have shown in the Chrysanthemum as an exhibition flower has depended to a large extent upon the large numbers of novelties possessing superior merit from the point of view of the florist that have been introduced each season. Judging from recent experience, it seems hardly likely that such progress as that which has been obtained can be continued indefinitely. In point of size not only are the flowers sufficiently large, but

they appear to have attained to a size which is nearly the limit of which they are capable. It is some years now since the variety Madame Carnot was raised by M. CALVAT, but we believe that there are few if any recent novelties that are bigger than the largest specimens of that variety we have seen from Mr. NORMAN DAVIS'S establishment. In any case, we may regard it as a blessing if greater size is not sought in new varieties, but, instead, refinement in contour and richness, variety and brightness in colour are encouraged. There are so many good varieties in gardens already that we think a very high standard of merit should be exacted in varieties to which certificates are awarded. The Royal Horticultural Society's Floral Committee set a good example in this way on Tuesday last, when many seedlings were shown for Certificate, and all were rejected. The only award made was to a sport that will prove valuable for the supply of the market. We believe that several of those shown at the Royal Horticultural Society's meeting will prove to be sufficiently good to gain awards at a later period, but if the Committee wished to see them again in better condition such exercise of caution is to be commended.

At the National Chrysanthemum Society's show at the Crystal Palace, of which a detailed report is given on another page, there were upwards of fifty varieties entered for certificate, of which only very few were successful. It will be noticed that of the Incurveds certificated, all belong to the new large-flowered type, that is quite distinct from the old section of purely Chinese flowers, like those of the Rundle family. The Shows upon the whole appear to be becoming in greater degree than ever displays of Japanese Chrysanthemums. There is less interest in the Incurveds; and the Pompons, Anemone-flowered, and most beautiful single flowers are scarcely more than represented. We hope that all that can be done will be done to encourage the cultivation and improvement of every section, and are therefore glad to observe that cultivators and raisers appear to be as interested in their work as they have been heretofore.

A CHRYSANTHEMUM EXHIBITION IN SHANGHAI (see Supplementary Illustration).—

Now that the attention of many of our readers is directed towards the numerous Chrysanthemum exhibitions that are being held in almost every part of this country and on the continent, the supplement to our present issue will be found interesting, as showing part of an exhibition that took place at Shanghai, in the native country of the Chrysanthemum, in November last. Our correspondent, Miss PROCTER, Hon. Sec. of the Shanghai Horticultural Society, to whom we are indebted for the photograph, states that the exhibition was held in the large Drill Hall, and that it was quite filled with exhibits, most of which were Chrysanthemums. There was also one large room reserved for cut flowers and table decorations, and another filled with Chrysanthemum plants trained as standards. This system of training has not been practised in Shanghai until recently, the system generally adopted being shown in the photograph. The plants appear to be first-rate specimens of the "bush" system of training, and it will be observed that in every instance they are furnished with well-developed foliage, even to the base. The indistinct notice on the left of the picture

above the plants is the word "Incurved," and the white spaces amongst the plants are show-tickets denoting "First prize," "Second prize," "Highly recommended," &c. In the original photograph can be seen Chinese characters affixed to each of the ornamental pots in which the plants are growing, probably denoting to whom the plants belong. We may add that the Drill Hall at Shanghai is a well-appointed building, illuminated by electric light.

ST. LOUIS EXHIBITION.—We learn that a "Grand Prix" (why expressed in French?) was awarded to the British authorities for the garden in the British section. Of this garden, arranged according to the designs of Mr. GOLDRING, we gave a plan in our issue for March 12. Messrs. SUTTON & SONS were awarded a "Grand Prix" for flowers, as well as a "Gold Medal" for grass-seeds. The lawns in the British section were produced from seeds supplied by Messrs. SUTTON.

— **AWARD TO THE GARDEN CITY ASSOCIATION.**—The exhibit of the Garden City Association in the social department of the British section has been awarded a "grand prize" by the superior jury. The exhibit has created a great interest among visitors to this section of the exhibition; the American working-men have been favourably commenting upon the idea of getting a cottage for 7s. per week, and many inquiries for further information have been received at the office.

— Another honour to British horticulture is that of a Gold Medal awarded to Messrs. H. CANNELL & SONS, Swanley, for an exhibit which was also contained in the old English garden at the St. Louis Exhibition.

"THE GARDEN CITY."—The purpose of a new periodical issued under this title is to impress upon the public the necessity for the reforms set forth in the objects of the Garden City Association:—"We advocate the creation of new centres of industry and urban life, 'the ordered design and development of towns.' We desire to accomplish our aim primarily through the members of the Association, the fruitfulness of whose efforts during the past five years is borne witness to by the formation of First Garden City, Ltd., whose practical work and proposals for establishing an industrial town in Hertfordshire are creating such widespread interest. We believe also that to large numbers of the general public our propaganda is as yet unknown, and it is from such as are interested in the solution of the urgent problems of modern urban life that we venture to claim support for our crusade." We sympathise with the objects of the Association, and wish the new journal every success. It may be had from SIMPKIN, MARSHALL & Co. for 3d.

SURREY COUNTY GARDENING.—The second of the Silver Knightian Medals for cottage gardening in Surrey, placed at the disposal of the County Education Committee by the Council of the Royal Horticultural Society, was on Saturday evening last, at the Redhill Technical Institute, presented to Mr. HENRY BROWN, of Sidlow, in the South Park Society's district. The gathering, which was a large one, was presided over by the Mayor of Reigate, and the presentation was made by the wife of the local County Council representative, Mr. E. C. P. HULL. Mr. BROWN's garden, which was seen in the summer, and was, as usual, in very beautiful condition, obtained the highest number of marks (192) yet awarded to any cottage garden in the county by the official judges, Messrs. J. WRIGHT, V.M.H., and ALEXANDER DEAN. Both these gentlemen attended the presentation, and gave addresses, the former dealing with the general condition of gardening in connection with elementary and continuation schools, and the latter in reference to cottage gardening and allotment culture. The Allotment

Medal goes to HARVEY HOPKINS, an ex-police sergeant at Carshalton, whose fine plot obtained the very high number of 202 marks. Last year's Medal was won by a constable at Wimbledon, F. REYNOLDS.

MR. ALEXANDER DEAN.—At the fortnightly meeting of the Kingston and District Gardeners' Mutual Improvement Society, held on October 28, Mr. A. DEAN was the recipient of a marble mantel clock, and an address from the members of the above Society, in conjunction with those of the Kingston Chrysanthemum Society, to mark the celebration of his Golden Wedding on November 4. For the Chrysanthemum Society Mr. G. COX and Mr. W. HAYWARD referred to the great assistance rendered by Mr. DEAN, whilst Mr. J. T. BLENCOVE and Mr. W. G. SMITH, Kingston, the latter of whom read the address of congratulation, spoke for the Kingston Gardeners' Society. Mr. E. H. JENKINS, Hampton Hill, presided, and made the presentation. Each of the speakers eulogised the value of Mr. DEAN's unstinted devotion to all that pertains to gardeners and gardening, reference being made to his services to horticulture as instructor, writer, judge, critic, &c. Mr. DEAN in feeling terms referred to the great pleasure he had found in horticultural pursuits.

THE RECENT ORCHID EXHIBITION AT DÜSELDORF.—In addition to the awards mentioned in our report last week, we learn that M. EMILE PRAET, Mont St. Amand, Ghent, obtained a 1st prize for a fine group of fifty plants of *Cattleya labiata*, and a special prize for a collection of eighty different Orchids, among which were very good specimens of *Cattleya Hardyana*, *C. heatonensis*, *C. aurea*, *C. labiata alba*, and *C. Peetersi*.

GARDENING AT BATTERSEA.—The Battersea Borough Council, having erected on the Latchmere Estate some time since working-class dwellings accommodating 315 families, desired to take steps to encourage the tenants to practise window-gardening, &c. In co-operation with the Battersea, Clapham, and Wandsworth Amateur Chrysanthemum and Horticultural Society, prizes were offered (1) for the best-arranged window-sill garden; (2) the best-arranged front-window indoor garden; (3) the best-kept back-garden. Although some of the tenants had not been in occupation for six months, the number of entries were as follows:—Back-garden class, 41; window-sill garden, 9; and front-window garden, 3. The prizes were presented by the Mayoress at a public meeting held on October 28. Speeches were made by Mr. W. A. ADAMS, Chairman of the Housing Committee; the MAYOR; Mr. W. J. STRINGER, Chairman of the Horticultural Society, and others. The results of the action of the Council in the matter were considered to be satisfactory.

INTERNATIONAL EXHIBITION OF BULBS AT HAARLEM.—We learn that the Royal Dutch Bulb Growers' Society at Haarlem, Holland, intends to hold its quinquennial exhibition of bulbous flowers from March 17 to 21, 1905. The schedule, which has been published, shows that a large number of prizes will be offered, and it is the intention to make this exhibition more interesting than any of the previous shows of the Society. Further particulars may be obtained on application to the Secretary, Mr. JOH. DE BREUCK, Haarlem, Holland.

"FLORA AND SYLVA."—In the September number are coloured figures of *Lelio-Cattleya Rex*, a cross between *Cattleya Mossiae* Reineckiana and *Laelia purpurata* var. *alba*, and of *Rehmannia angulata*, as well as a descriptive article on *Tropaeolums* and *Pentstemons*. The October number contains a coloured figure of *Magnolia Campbelli*, together with useful articles on *Lachenalias* and *Hemerocallis*. Why the former should be called "Cowslips" is not evident.

A coloured plate of *Calceolaria plantaginea* is also given.

"INDEX KEWENSIS PLANTARUM PHANEROGAMARUM."—The first part of the second supplement (1896—1900), containing the letters A—L, is now ready, price 12s. net; it is printed in 4to (12½ × 10½ inches), uniformly in all respects with the *Index Kewensis* itself. The *Index*, in two volumes, half morocco, together with the first supplement (1886—1895), can be procured from Mr. FROWDE, price £12 13s. net.

BRITISH GARDENERS' ASSOCIATION.—A meeting was held in the Town Hall, Haslemere, on Friday, October 28. Mr. W. BROOKS, of Blackdown House Gardens, presided. The objects of the Association were explained by Mr. J. SROCKS, of Kew, who attended for this purpose. Mr. SROCKS was able to remove some misunderstandings that have occurred in respect to "gardens of repute," and said that many gardeners thought it to be necessary to have a character from their present employer before they could join the Association, which is a mistake. None is asked for in the form of application. After a discussion it was unanimously decided to start a branch of the British Gardeners' Association in the district; and further, that a committee should be elected at a meeting to be held on November 4. Mr. BROOKS was asked to act as Honorary Secretary, which he agreed to do.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

DIASCIA BARBERÆ.—Judging from the seedsmen's catalogues this plant is considered to be a half-hardy annual. As a matter of fact it is a half-hardy perennial, for I have two plants in different positions (both, however, warm ones) that have stood the last two winters without any protection. From its habit of throwing out short stolons, each of which produces a short raceme of the pretty rose-coloured flowers, it continues longer in bloom than any plant I know, viz., from the end of May to the present time. I recently took up about half of one of the plants, from which I got over twenty nicely-rooted stolons, which I hope to keep till next spring in a cold frame. *Alfred O. Walker, Maidstone.*

POTATOS TO EAT.—I was very pleased to read in your issue of October 22 the timely remarks of the Rev. G. H. Engleheart upon Potatos, and also upon the National Potato Society. The first show of this Society at the Crystal Palace has, I think, taught us that some better methods of judging Potatos should be adopted, and that at once. The staging of tubers alone is of no practical value to anybody. Is it not practicable to exhibit a growing plant or plants of any variety, or a dishful of its produce as lifted from the soil, with a few tubers properly boiled? If this were done visitors to the show would have some opportunity of noting the habit of growth, productiveness, the general appearance of the tubers, and the cooking qualities. The judges, too, would have some information to guide them in making awards. This applies particularly to seedling varieties submitted for the first time. There was a prize offered at the Crystal Palace Show for the best collection of seedling varieties not in commerce. Now, the tubers which were awarded the 1st prize in this class were, so far as tubers are concerned, all that the most fastidious judge could desire; but what of the other and more essential points—flavour and quality, productiveness and disease-resisting ability? It is impossible under the present system of granting awards for a judge to form any idea of the most necessary points in Potatos shown in such a class as this. The pedigree, of course, is usually given; but experience has taught us that this is by no means an index to the good points of a Potato. If a raiser can demonstrate that his latest introduction is a phenomenon in the way of a heavy cropper, he has satisfied himself and the demands of

growers. What is the use of growing a variety that will yield, say, 20 tons to the acre, or 170 tubers to the plant, if quality and flavour in that particular variety are conspicuous by their absence? Are growers planting Potatoes to feed indiscriminating cattle, as Mr. Engleheart aptly puts it, or are they planting them for human food? A variety of Potato should possess quality as its first recommendation, and productiveness as its second. It may be that many of the seedlings submitted to the National Potato Society were perfect in the above respects, but how could the judges or visitors to the show ascertain this? I was sorry to notice that the Society encouraged at the Crystal Palace the practice of making awards to tubers of large size, quite unfit for ordinary and general cooking purposes. This I believe to be a fatal error, and I challenged the award in question at the evening meeting of the Society, but I was told by one of the gentlemen who judged this particular lot of Potatoes that I wanted the Potato judged from an horticultural and not from an agricultural standard; what they wanted was weight. [Of water? or of starch? or proteid? Ed.] This is of course new doctrine, and I regret to find the National Potato Society adopting it. Your correspondent also draws attention to the prejudice against yellow-coloured Potatoes. There are many yellow-fleshed varieties in commerce of great excellence, and I cannot imagine why market growers do not push them more than they do. I maintain that colour is of no consideration if the quality is right, and if the variety cooks white and mealy for the table. I could put on the English market several varieties of coloured potatoes, both round and kidney shaped, of excellent flavour—something that would be a revelation to present-day consumers; but the colour of the skin debarbs this. The crofters and cottars in Scotland have better Potatoes on their humble tables than the great majority of their English cousins. Why should this be? *George M. Taylor, Inveresk, Midlothian.*

NATIONAL POTATO SOCIETY AND COOKED POTATOES.—Does "A. C. B." (p. 306, October 29) infer that this Society should cook half its exhibits? It will do nothing so misleading. It is well known to experts that many of our best Potatoes do not develop their full flavour until the winter, and a variety might be condemned at a summer or early autumn show which in its season is good. Judging by flavour sounds right in theory, but it may be all wrong in practice. *Walter P. Wright.*

A POTATO CROP.—I am sending a photograph of a crop of Sutton's Discovery Potato grown by me from 2 lb. of seed supplied by Messrs. Sutton & Sons in the spring of 1904. The crop weighed 607 lb. of tubers; the tubers were of good quality throughout, not a single diseased tuber could I find; the haulm remained green until cut down by frost. *H. Green, The Garden, Nocton Hall, near Lincoln.*

POTATO ELDORADO.—From a tuber of 1½ oz. of the Potato Eldorado my master and I have obtained a crop of 1,372 lb. or 12½ cwt.! Our biggest total was 5 lb. from one single "cutting" plant. The heaviest single tuber obtained weighs 1 lb. 12 oz. Our soil is stiff, overlying heavy clay and chalk. *W. Bradford, Medstead.* The figures are those given by our correspondent. [Ed.]

POTATO NORTHERN STAR.—Two small tubers of "Northern Star" were obtained in March last, the weight of each being 1½ oz., and having six and five eyes respectively. The tubers were cut into eleven pieces and placed in small pots in a little warmth, where they made rapid progress. Cuttings were afterwards taken from the plants, and were then grown in pots. At the end of May the plants were transferred to the open ground at a distance of 2 feet apart, and during the remainder of the season they received only ordinary cultivation. The crop has just been lifted, and the result is 114 lb. of good Potatoes. The earliest-raised plants produced the heaviest crop, from fifty to sixty Potatoes to each root, while the later plants raised from cuttings produced the finest tubers. *J. Pound, Mongewell Park Gardens, Wallingford.*

—I purchased 1 lb. of tubers for my employer's garden, and determined to give the

variety good cultivation. The crop amounts to 167 lb. of tubers. *F. Woodward, Godden Green Gardens, Sevenoaks.*

NERINE FOTHERGILLI MAJOR IN THE OPEN.—This, the most brilliant of all the Guernsey Lilies, has been flowering well with me in a warm, wall-backed border, several flower-spikes shooting up from the soil about the middle of September. The trusses, which consisted of from fifteen to twenty flowers, were in some cases 5 inches across, and nothing could excel the splendid colouring of the flowers, whose bright scarlet appeared in the sunshine to be thickly sprinkled with gold-dust. In certain Cornish gardens that I know, these Neries also grow and flower satisfactorily in the open, and I should imagine that in hot and sunny borders in the south-west, they would generally do well if planted in gritty, porous soil. *S. W. Fitzherbert.*

SAGINA PROCUMBENS ON GARDEN PATHS.—In what way does the common garden weed, of which I enclose a specimen, finds its way into our gravel paths? During the winter before last, I remade all my paths. The gravel was taken, not from an old pit, where weeds might have sown themselves, but from a fresh excavation about 10 feet down, where the subsoil had not been disturbed for centuries. Throughout last year not a weed was visible on my paths. During this summer, however, they have become nearly covered by this weed. How could it possibly have got there? There are no weeds allowed on my borders or about the garden. The seeds of this weed cannot be carried by the wind, like that of a Thistle or a Dandelion. I am puzzled how to extirpate the weed. I experimented with an advertised "weed-killer"; it killed the weeds, but killed also the front row of Strawberry plants. Apparently the fumes caused the death, for none of the fluid reached them. It also left a brown stain on the paths. I am thinking of trying the effect of a benzine "Painters' Lamp," to scorch off the weeds, protecting the Box-edging by an upright board set on edge, and covered with thin sheet-iron. The paths, however, are now too wet for that experiment. I fear that this weed being a tap-rooted plant, the lamp may only burn off the top, and the plant may shoot up again. *F. S.* [Dress the paths with diluted carbolic acid, mixing 2 to 3 ounces of acid to each gallon of water. *Poison. Ed.*]

MAGNOLIA KOBUS (= THURBERI).—It may interest some of your readers to know that this Magnolia is bearing several spikes of bright scarlet seeds in the botanic gardens here. The tree was planted eight years ago, and produced its first flowers three years since. *J. Milburn, Superintendent, Victoria Park, Bath.*

IMPORTED ODONTOGLOSSUMS.—We have recently potted up and grown on some thousands of *Odontoglossum crispum* of all sizes. As a result I wish to advise my fellow amateurs to be patient, and not to leave more than one flower on unestablished plants. One flower, or rather bud, may possibly mature, but it is scarcely to be hoped that more than 50 per cent. of the plants will produce anything but abortions. This of course means an unnecessary weakening of the already weak plants. I remove all but the lowest bud, and find this the best. It is natural for one to try to see what his purchase is likely to produce, but patience is everything, and immediately the flower is sufficiently expanded to be labelled it should be taken off. I am trying Oak-leaf mould. It will, I fear, mean more frequent disturbance for [re]potting than when using peat. *Odontoglossol.*

CUNNINGHAMIA SINENSIS.—Mr. Bartlett stated on p. 306 that the largest specimen he has seen is that growing at Pencarrow, North Cornwall. Here at Killerton, East Devon, there are two trees a good deal larger than the one at Pencarrow. One of these is a handsome well-furnished specimen 49 feet in height, and has a girth 5 feet 11 inches at 5 feet from the ground. The other, a poorly furnished but much taller specimen, measures 68 feet in height, and is 4 feet 3 inches in girth at 5 feet from the ground. This taller specimen, though thin

and poorly furnished, is, I believe, a typical example of the tree as it occurs in its native state. Both trees are well sheltered, and grow in a fertile, well-drained soil. Just now the pale-green of the young foliage contrasts well with the rich reddish-brown of the older foliage. *J. Coulls, Killerton Gardens.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

NOVEMBER 1.—The ordinary meeting was held in the Hall, Vincent Square, Westminster, on Tuesday last. The display was less than that made on the previous occasion, but the Hall was sufficiently furnished to have presented a good effect had some pains been taken to arrange the exhibits and to discard commonplace subjects.

Orchids were numerous, and the ORCHID COMMITTEE recommended awards, including one Botanical Certificate, one First-class Certificate, and six Awards of Merit.

The FLORAL COMMITTEE made two Awards, one being to a Chrysanthemum sport, and the other to the small-leaved Asparagus shown in fig. 146. There were several good seedling varieties of Chrysanthemums staged, but not in the best condition, therefore several that were passed over by the Committee may obtain Awards on a future occasion.

THE FRUIT AND VEGETABLE COMMITTEE made no awards to novelties. The most remarkable exhibit before this Committee was that of a collection of seedling Apples raised by Mr. CHAS. ROSS.

In the afternoon there were thirty new Fellows elected, and the Hon. VICARY GIBBS delivered a lecture on "Planting for Winter Effect," which was illustrated by a very representative collection of fresh specimens from the garden of Lord ALDENHAM at Elstree.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. C. T. Druery, H. B. May, Jas. Walker, R. Dean, Jas. Hudson, E. Molynceux, J. F. McLeod, G. Reuthe, J. A. Nix, R. Hooper Pearson, Geo. Gordon, Jas. Jeffries, Chas. Dixon, H. J. Cutbush, J. T. Bennett-Poë, C. E. Shea, W. Cuthbertson, E. H. Jenkins, W. J. James, E. T. Cook, George Paul, and Ed. Mawley.

Carnation "Lord Charles Beresford," exhibited by Messrs. CUTBUSH & SONS, is from a cross between the varieties Mrs. S. J. Brooks and Viscount Kitchener. The flowers are of medium to large size, excellent form, pronounced fragrance, and do not split the calyces. The Committee expressed a desire to see the variety again.

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. Ed. Beckett), filled the entire length of the north end of the Hall with a collection of sprays of plants carrying ornamental foliage, berries and fruits, coloured stems, &c., illustrative of their adaptability for winter effect in the garden and grounds. *Crategus crus-galli splendens* was especially striking. Among the plants with coloured foliage *Liquidambar styraciflua*, *Rhus typhina*, *Hydrangea quercifolia*, *Rhus Cotinus*, *Stephanandra Tanaka*, *Forsythia viridissima*, *Quercus coccinea* Waterer's variety (especially beautiful), and *Acer carpinifolium* were prominent, while such plants as *Phragmites communis*, *Glycerium argenteum*, *Typha latifolia*, *Bambusa* species and a host of other similar plants reminded one of the numerous ornamental species available for effective decoration in the gardens and grounds when many of the showy flowering plants are over. Among several species of *Colletia* nicely presented that of *C. cruciata* was in flower (Silver-Gilt Flora Medal).

MESSRS. CUTBUSH & SONS, Highgate, set up three showy groups, one comprised of retarded plants in flower, relieved with choice foliage plants, &c.; another of Carnations, and a third composed of hardy herbaceous flowers. The first-named was an excellent group in every respect, and included *Azaleas*, *Lilies of the Valley*, *Lilium tigrinum*, *L. auratum*, *L. longifolium*, *Astilbe* (*Spiraea*) *japonica* being well developed; and a number of *Ericas* and *Bouvardias* in flower arranged along the front gave an effective finish—a very bright display (Silver-gilt Flora Medal). The Carnations and hardy flowers from the same firm were arranged in an effective manner, and contained many of the best of those in flower at this season. (Silver Flora Medal).

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, presented a choice collection of Cordylines (Dracenas), interspersed with suitable Ferns. At one end of the group were several well-flowered plants of *Veronica Hendersoni* of crimson and white varieties. The Dracenas were excellently grown, with colours well developed, and included the varieties *Monarch*, the dark-coloured leaves having a lighter red-coloured margin; *terminalis superba*, *Hercules* (with very graceful foliage), *Haroldiana* (green with yellow variegations), *Masterpiece*, *Lord Wolseley*, *Sanderi*, &c. (Silver Banksian Medal).

Mr. E. T. COOK, Burnham Beeches, was awarded a Vote of Thanks for cut flowers of a single *Dahlia* under the name of *D. laciniosa purpurea*, a variety described as being less tender than others, being still fresh in a garden in which other varieties were cut down. The flowers were of rich crimson colour.

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, staged an extensive group of Ferns, most of them being large specimen plants. The collection comprised no fewer than sixty plants in pots, representing many genera and numerous species—*Acrostichums*, *Adiantums*, *Polypodiums*, *Gleichenia*, *Nephrolepis*, *Davallia*, *Gymnogramma*, &c. (Silver-gilt Flora Medal).

Mr. GEO. PRINCE, The Nurseries, Longworth, Berks, staged a very pleasing exhibit of Roses. Rose hips plentifully interspersed among the flowers reminded one of the lateness of the season for these popular flowers (Silver Flora Medal).

Messrs. BARR & SONS, 11, 12, and 13, King Street, Covent Garden, London, staged a mixed group, comprising perennial Asters, *Chrysanthemums*, *Nerines*, and pot plants of *Cyclamen neapolitanum*. *Nerine flexuosa alba* and *N. undulata* were presented in a number of well-grown pot plants.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. Hudson), set up several plants of *Begonia* "Marie." The variety somewhat resembles *Gloire de Lorraine*, but is of coarser habit, and the inflorescence is more loosely paniced than in that variety, and is developed well above the foliage. A very showy variety.

Messrs. JAS. VEITCH & SONS, Ltd., Chelsea, staged several types of winter-flowering *Begonias*: *B. idealis* (compact growing habit, with bright rose-coloured semi-double flowers), *B. Agatha*, *B. Agatha compacta*, and *B. Mrs. Heal* (flowers large, of a deep rosy colour). Several plants of *Jacobinia coccinea* was also included in Messrs. VEITCH's exhibit.

Twenty well-grown plants of *Begonia Gloire de Lorraine* and its white variety, "Turnford Hall," were set up by J. A. YOUNG, Esq., Stone House, West Hill, Putney, S.W. (gr., Mr. G. H. Street) (Bronze Banksian Medal).

The Hon. W. F. D. SMITH, Henley-on-Thames (gr., Mr. Perkins), staged a dozen plants of *Hippeastrums*, most of which were unnamed. They were all freely flowering, most of the plants carrying four or more flowers of excellent form. One variety named "William Henry," with very large crimson flowers, was especially fine, and all of them were flowering very early (Silver Banksian Medal).

Messrs. THOS. S. WARE, Ltd., Feltham, Middlesex, put up a number of hardy flowers in vases, also several groups of alpine plants. *Cyclamen cilicium* was flowering well in a pan. *Lithospermum rosmarinifolium*, *Sternbergia angustifolia*, *Nerine Fothergilli*, and *Corydalis thalictroides* were also noticed in flower (Silver Banksian Medal).

Mr. G. REUTHE, Hardy Plant Nursery, Keston, Kent, staged several hybrid *Nerines*, principally crosses obtained from *N. Fothergilli* and *N. pudica*. Mrs. J. I. Small is a promising variety, having the appearance of an improved *N. Fothergilli*, but with fewer flowers on the panicle than in the type.

Messrs. HUGH LOW & CO., Bush Hill Park, Middlesex, staged Carnations Winter Cheer, Mrs. T. W. Lawson, Mr. Theo. Roosevelt, &c.; also plants of *Asparagus medeoloides* var. *myrtifolia* (see fig. 146).

Messrs. W. & J. BROWN, nurserymen, Stamford, staged vases of Roses, Cactus-flowering zonal *Pelargoniums*, *Salvia splendens*, *Heliotrope*, and other greenhouse plants, arranging perennial Asters and sprays of berried shrubs as a background.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, staged an exhibit of ornamental and berried plants in pots, *Aucubas*, *Ivies*, *Osmanthus*, *Euonymus*, *Pernettias*, &c., a most useful class of plants for decorative purposes.

CHRYSANTHEMUMS.

Messrs. W. WELLS & Co., Ltd., Earlswood, Redhill, Surrey, filled one of the side tables with varieties of *Chrysanthemums* in vases, epergnes, &c. Prominent were a number of single varieties, not the least pleasing of the *Chrysanthemum* genus, also flowers in good character of the larger types. Among the latter we noticed F. S. Vallis (plentifully and well displayed), Miss Elsie Fulton, Mrs. Geo. Mileham (in good form), Hon. Mrs. A. Ackland, Bessie Godfrey, Merstham Crimson (of very rich colour, very promising), Dora Stevens, J. E. Brooks, and Mrs. John E. Dunne, &c.

Among the "singles" mention may be made of Clibran's Terra-cotta, Rosa Wells (crimson), Kitty Bourne (a pleasing soft yellow colour), Ethel Beer (a new variety of sulphur-yellow), Mary Richardson, and Miss E. Partridge, with petals of a pleasing light rose colour (Silver-gilt Banksian Medal).



FIG. 146.—*ASPARAGUS MEDEOLOIDES MYRTIFOLIA*.
Awarded an Award of Merit on Tuesday last.

FRANK PENN, Esq., Canterbury, Kent (gr., Mr. Fairweather), staged a dozen commendable exhibition blooms of *Chrysanthemums*.

Mr. E. POTTER, Camden Nursery, Cranbrook, Kent, staged numerous vases of the free-flowering type of *Chrysanthemums*, Rubies (bright rosy-purple), Rye-croft Glory, White Quintus (an excellent decorative "white"), Le Pactole (bronze), &c. Mr. POTTER also staged several forms of *Ligustrum ovalifolium*, and a collection of named varieties of *Pentstemon* (Silver Banksian Medal).

Mr. BROUGHTON, Norfolk Road, Maidenhead, showed two dozen and a half flowers of a new white incurved Japanese *Chrysanthemum*, named Mrs. Broughton.

New varieties of *Chrysanthemums* were also shown by Mr. W. J. BALDOCK, Swanley, Kent; Mr. W. SEWARD, Hanwell; and Mr. N. Molyneux, gr. to A. H. LEE, Esq., Rookesbury Park.

AWARDS.

AWARDS OF MERIT.

Asparagus medeoloides myrtifolia.—This is a very small-leaved variety of the slender-growing *Asparagus*, which is known in gardens as "Smilax" (see fig. 146).

The growths will be very suitable for use in artistic floral arrangements. Shown by Messrs. HUGH LOW & CO., Bush Hill Park Nurseries.

Chrysanthemum Kathleen Thomson.—An Award of Merit was recommended to this variety as one suitable for cultivation to supply the markets. It is a sport from "Caprice du Printemps," which is rose coloured, whilst the flowers of the sport are of red colour, with florets tipped and margined with yellow. In other respects the sport is similar to the type, and is equally valuable for general decorative purposes. Shown by Mr. J. H. THOMSON, Enfield Highway, and Mr. F. LILLEY, Guernsey, the sport having apparently occurred simultaneously in these widely-separated districts.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. J. O'Brien (Hon. Sec.), de B. Crawshaw, N. C. Cookson, J. W. Potter, W. Boxall, W. H. Young, W. H. White, F. W. Ashton, A. A. McBean, H. T. Pitt, H. A. Tracy, G. F. Moore, J. Charlesworth, H. Ballantine, R. G. Thwaites, J. Douglas, F. Wellesley, W. Cobb, and F. Sander.

There was probably the finest show of Orchids ever made in the month of November.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), was awarded a Gold Medal for a very large group, in which were very fine specimens of *Cymbidium Tracyanum*, *C. elegans*, *C. × Winnianum*, *Cattleya labiata* Master J. Colman (a very handsome flower), *C. l. alba*, *C. l. cerulea*, *C. l. illustris*, and other fine forms; *Cypripedium insigne* Sandere, *Ernesti*, *The Queen*, *magnificum*, and other forms of *insigne*; *C. × nitens*, *C. × Arthurianum*, *C. Rothschildianum*, *Oncidium varicosum* and *O. ornithorhynchum album*, *Calanthe × Wm. Murray*, *C. × Veitchii* and *C. vestita*, *Cattleya × Mantini nobilior*, *C. × John Baguley*, *C. Minerva lilacina*, &c. In the centre was a pretty arrangement of *Masdevallia Davisii* with twenty flowers, *M. cucullata* and others, in front of which were plants of the rare *Laelia praestans* Gatton Park variety with eight white, lavender-tinted flowers, *L. p. "George Prince of Wales,"* white with purple marks on the lip; *Spathoglottis aurea* Kimballiana, and a much finer yellow form of it raised at Gatton from seeds.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegge), received a Silver-gilt Flora Medal for a fine group, in which forms of *Cattleya labiata* were remarkable, the white ones including *C. l. R. I. Measures*, *G. G. Whitelegge*, *Amesiana*, *Ariadne*, and *alba*. One grand dark form named "Ruby" had flowers resembling those of a fine *C. Warszewiczii*, but darker in colour. Other specially fine things noted were a remarkably dark and handsome *Cymbidium Tracyanum*, *C. giganteum*, *Laelio-Cattleya × luminosa*, and other *Laelio-Cattleyas*, fine *Masdevallia Veitchii*, *Lycaste Skinneri* and variety *alba*, the fine yellow *Oncidium Forbesii*, *Bradshawiae*, &c.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured a Silver-gilt Flora Medal for a very fine group, principally hybrids. In the centre was a fine example of the clear white *Laelio-Cattleya × Digbyano-Mossie* "Queen Alexandra," for which they received a First-class Certificate at the last meeting. In front of it was a very remarkable spotted *Odontoglossum crispum*, the spotting being distributed over the whole flower. Other fine hybrids were *Sophro-Cattleya × Nydia* with dark crimson flower, *Cypripedium × Lord Ossulston* (a distinct cross), *C. × Rene Jolibois*, *C. × Madame Jules Hye*, *C. × Niobe*, *C. × Sir Redvers Buller*, *Laelio-Cattleya × Haroldiana*, and other *Laelio-Cattleyas*; *Cattleya × Mantini*, and allied hybrids; *Zygopetalum × xanthino-stapelioides* (a supposed natural hybrid), *Cattleya × Lord Rothschild*, &c.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an extensive group of fine hybrids and species. The principal novelties were *Cypripedium × nitens* "Perfection," which may be likened to a *C. insigne* Harefield Hall, but of nitens colouring; *C. × Clio* (insigne *Chantini × Lynchianum*), a fine hybrid; *C. × Stanley Rogerson* (Charlesworthii × *callosum*), large, and with a very striking white rose-tinted dorsal sepal; and *Cattleya × Neptune* (Schilleriana × *labiata*), a pretty lilac and rose-purple flower. Others noted were *Cymbidium × Holmesii*, with several spikes; a rich claret-tipped *Pescatorea Klabochorum*, two fine *Cynoches chlorochilon*, *Cymbidium Tracyanum*, with three spikes; *Miltonia × Bluntii* Lubbersiana, *M. candida* grandiflora with three spikes; *Lycaste Skinneri alba*, &c.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Banksian Medal for a good group of hybrids, including the fine *Cypripedium* × *Thalia*, the new *Sophro-Cattleya* × *Atrous* (*S. grandiflora* × *C. Lawrenceana*), of bright reddish-purple colour; *Cattleya* × *Mantini*, *C. × Portia*, *C. × Mrs. J. W. Whiteley*, *Laelio-Cattleya* × *Haroldiana*, *L.-C. × Bryan*, *L.-C. × Decia*, *L.-C. × Terentia*, *L.-C. × Digbyano-Warscewiczii*, *L. × Digbyano-purpurata*, and other showy hybrids.

Messrs. JAS. & A. A. McBEAN, Cooksbridge, staged a very fine group in which their speciality of handsome *Odontoglossum crispum* was well displayed. The *Cypripediums* included a grand specimen of *C. × Morgania* with five spikes, bearing together sixteen flowers (Cultural Commendation); fine *C. × Lecanum giganteum*, *C. insigne* Harefield Hall, *C. i. Sanderae*, and others, including a very attractive hybrid named "Gaiety" of unrecorded parentage. Others specially noteworthy were *Cymbidium Tracyanum*, *Cattleya × Mantini*, fine *C. Bowringiana*, &c. (Silver Banksian Medal).

R. BRIGGS-BURY, Esq., Bank House, Accrington, staged a select group in which were two fine plants of the white *Cattleya labiata* Gilmourie and one of *C. l. alba*, the singular striped *C. labiata* Peetersii, *Laelio-Cattleya × Rosalind*, two *Cypripedium × Maudiae*, *C. × triumphans magnificum*, and a fine hybrid between *C. Lecanum magnificum* and *C. × Sallieri Hyeatum* (Silver Banksian Medal).

H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), staged an effective group in which *Cypripediums* were prominent. The varieties of *C. insigne* included *C. i. Sanderae* and *C. i. punctatum violaceum*; the hybrids *C. × H. S. Goodson*, *C. × The Captain*, varieties of *C. × Lecanum*, *C. × argotomsum*, *C. Haynaldianum*, &c. Others noted were *Cattleya × Portia*, *C. × Mrs. J. W. Whiteley*, forms of *Lycaste Skinneri* including *alba*, *Maxillaria picta*, *Lycaste costata*, &c. (Silver Banksian Medal).

Messrs. STANLEY & Co., Southgate, had a group of *Cattleya labiata*, *C. Loddigesii*, *C. O'Brieniana*, *C. × Mantini nobilior*, *Cypripedium insigne* Ballie, *C. i. Youngianum*, *Odontoglossum × lochristyense*, *Miltonia Regnellii* Crashleyana, a very fine *M. × Cogniauxiae*, &c. (Silver Banksian Medal).

Messrs. HUGH LOW & Co., staged an effective group in which were varieties of *Cattleya labiata*, including one white form; *C. × Parthenia* "Prince of Wales," *C. × Maronii*, *C. Bowringiana* with six spikes, *Cypripedium × optimum*, a very attractive *Charlesworthii* cross; *Ionopsis paniculata*, *Oncidium cheiroporum*, *Zygopetalum Waillesianum*, *Lelia × Gratrixiae*, &c. (Silver Banksian Medal).

The Hon. WALTER ROTHSCHILD, Tring Park (gr., Mr. A. Dyer) showed a selection of interesting Orchids, including the singular *Pleurothallis Smithiana* with short racemes of purple-and-white flowers, a rather pretty *Bulbophyllum* allied to *B. rufinum*; a good specimen of *Arundina chinensis*, *Trichosma suavis*, *Cattleya Bowringiana* concolor, *Laelio-Cattleya × heatonensis* (*L. Digbyana* × *C. × Hardyana*), *Masdevallia Lowii*, and the very beautiful *Cirrhopetalum Rothschildianum*.

NORMAN C. COOKSON, Esq. (gr., Mr. H. J. Chapman), showed *Cypripedium × The Pelican* (*Sandro-superbiens* × *Rothschildianum*), formed much like *C. Sandarianum*, but much larger.

H. L. BISCHOFFSHEIM, Esq., Stanmore (gr., Mr. Ellis), sent a white form of *Dendrobium Phalenopsis*.

Miss VIOLET FELLOWES, Shotesham Park, Norwich (gr., Mr. L. Smith), showed a good dark *Cattleya labiata*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya × Cuppei Charlesworth's variety (*L. cinnabarina* × *C. Warscewiczii*), from Messrs. CHARLESWORTH, Heaton, Bradford.—A great advance on the original type, and one of the best yellow-and-crimson hybrids of its class. Sepals and petals bright yellow, front of lip deep ruby-crimson.

AWARD OF MERIT.

Lelia × Illustris (*L. × Latonia* × *C. aurea*), from Messrs. CHARLESWORTH.—A handsome flower of good size and shape. Sepals and petals yellow veined and tinged with rose. Lip claret-crimson.

Cattleya labiata "Mrs. Francis Wellesley," from F. WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—A charming variety with delicate blush-rose flowers, the centre of the lip being silver-white

with a chrome-yellow disc. The plant was a finely-grown one, with two spikes of five and four flowers.

Cypripedium × W. R. Lee "Oakwood - raised" variety (*superbiens* × *Rothschildianum*), from NORMAN C. COOKSON, Esq. (gr., Mr. H. J. Chapman).—A noble variety, larger and more clearly marked than other forms. Upper sepal and broad petals cream-white, the former striped and the latter spotted with purple. The plant had a spike of four large flowers.

Laelio-Cattleya × Digbyano-Warneri "Eric Lucas," from C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan).—Flowers bright dark-rose, with yellowish-white base to the lip and fringed margin.

Cattleya labiata "Miss Kate Brazier," from Messrs. SANDER & SONS, St. Albans.—A very fine, large-flowered, white form of *C. labiata*, with some light purple markings on the lip, which had a pale yellow disc.

Cattleya × G. W. Law-Schofield (*labiata* Cooksonianae × *Lord Rothschild*).—From Messrs. SANDER & SONS, St. Albans. A very attractive flower, with silvery-white sepals and petals, the lip having a prismatic arrangement of yellow markings from the base. Front of lip velvety-purple, the crimped margin lavender-coloured (Botanical Certificate).

Liparis fulgens.—From F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin. Inflorescence about 9 inches in length, bearing numerous pretty red flowers.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman); and Messrs. S. Mortimer, A. Dean, H. Parr, Geo. Kelf, F. Q. Lane, G. Reynolds, J. Jacques, J. Willard, G. Norman, Owen Thomas, George Wythes, W. Poupart, A. H. Pearson, Ed. Beckett, and Jos. Cheal.

Mr. Charles Ross (gr. to Col. ARCHER HOUBLON, Welford Park, Newbury) staged a remarkable collection of eighteen seedling varieties of Apples, all of which have been raised under his own direction. These varieties were Charles Ross (F.C.C.) (Peasgood's Nonesuch × Cox's Orange Pippin), Hector MacDonald (A.M.), Redwing, The Vernon, from Adams' Pearmain; Bertha, from Cornish Aromatic; Gospatric, from Golden Reinette; Rival (A.M.), from Peasgood's Nonesuch × Cox's Orange Pippin; Lady Alice Eyre, from Golden Reinette, Parquet (A.M.); Mrs. Phillimore (A.M.), from Lord Burghley × Mr. Gladstone; Ruddy, from Ecklinville Seedling × Mère de Ménage; The Houblon (A.M.), from Peasgood's Nonesuch and Cox's Orange Pippin; Welford Park Nonesuch (F.C.C.), from Golden Harvey; Berks Pearmain, from Golden Reinette; Armored (F.C.C.), a dessert variety, nearly covered with russet, will keep well until the end of May; Atalanta (A.M.), from Scarlet Nonpareil; Bella (A.M.), from Golden Reinette and Tyro. Mr. Ross has received at various times from the Fruit and Vegetable Committee three First-class Certificates and eight Awards of Merit for Seedling Apples he has raised. The letters F.C.C. and A.M., appended to some of the above-mentioned varieties, indicate that such awards were gained on former occasions; no such awards were made on Tuesday last, but the exhibit as a whole was awarded the "Hogg" Medal.

Messrs. HORNE & SONS, Cliffe, near Rochester, Kent, exhibited excellent fruits of the new varieties of Apple Charles Ross and The Houblon.

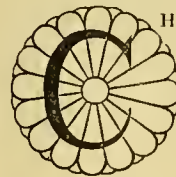
Specimens of the orange-coloured fruits of the Persimmon (*Diospyros Virginiana*) were shown by Canon ELLACOMBE, Bitton Vicarage, Bristol, to whom a Cultural Commendation was awarded.

A number of seedling varieties of Apples was shown by Mr. ED. LANE, Kynaston, Ross, Herefordshire, also by Mr. STRUGNELL, Road Ashton Gardens, Trowbridge; Mr. LEWIS SMITH, Shotesham Park, near Norwich; Messrs. W. & J. BROWN, Peterborough; Mr. W. PURSELL, Grand Junction Inn, Buckingham; Messrs. JAS. VEITCH & SONS, Ltd., Chelsea; Mr. H. HICKFORD, Bradford St. Rocking, Baintree; Mr. G. R. KING, East Horndon, Essex; and Mr. J. E. HATHAWAY, Baldersby Gardens, Thirsk, but no awards were made.

Mr. H. KING, Biddenham, Bedford, staged twenty-seven dishes of Apples and Pears. The fruits were not of large size generally, but were well coloured and of good finish. Hollandbury was shown in excellent condition. A good dish of Duchesse d'Angoulême Pears was noticed (Silver Banksian Medal).

Specimens of a nut "Faulkner's Prolific" were shown by Mr. A. FAULKNER, Inkpen, Hungerford.

NATIONAL CHRYSANTHEMUM.



CHRYSANTHEMUMS were exhibited under the auspices of the National Chrysanthemum Society at the Crystal Palace on Wednesday and Thursday last. The display was as fine as ever, and there were no signs that interest in Chrysanthemums as exhibition flowers

is decreasing. This event was the Society's festival of the year, being the greatest of the three ordinary competitive exhibitions arranged to take place at the Palace. The classes were similar to those of last year, with only minor alterations. In almost all the classes there was a healthy competition, and first-rate flowers were found for all the best prizes. In addition however to the usual prizes, there were 109 special prizes of 5s. each and one of 10s. 6d. These were instituted on the proposition of Mr. G. H. CUTBERT in December last. There were thirty-two donors, and they selected certain varieties and offered prizes of 5s. for the best blooms of these in the show. These prizes were independent of others for which the same flowers may have competed. In the following report no details of these prizes have been included, as no useful purpose could be thereby served.

The arrangements for the show were carried out by the Secretary, Mr. R. DEAN, who was assisted by Mr. G. CASELTON, Garden Superintendent at the Palace.

OPEN CLASS FOR CHRYSANTHEMUM DISPLAY.

In the first class, which called for a floral display of Chrysanthemums and foliage plants arranged for effect, there were two competitors. Each exhibitor had a space allowed of 300 superficial feet. All the plants had to be grown by the exhibitor, and to be shown as pot plants or as cut flowers. The 1st honours fell to a private grower, Lady TATE, Park Hill, Streatham. Common (gr., Mr. W. Howe), whose group contained a cone-like arrangement in the centre and an outside edging which was pleasingly broken up by a number of tall epergnes filled with well-grown specimen blooms. Palms, Codiaums (Crotons), Ferns, Asparagus plumosus, Bamboos, &c., were utilised with good effect, and enhanced the beauty of the group. The flowers were excellent examples of the most popular exhibition varieties and decorative types. Messrs. J. PEED & SON, West Norwood, the only other competitors, were awarded the 2nd prize. This group was arranged in a similar manner to the above, and must have run the 1st prize group very close for premier honours. Similar foliage plants were utilised for effect as in the above-mentioned group, and the flowers were also meritorious. Mention may be made of the varieties Mrs. Geo. Mileham, F. S. Vallis, Godfrey's Pride, Lord Hopetoun (exceptionally well coloured and developed), Henry Perkins, W. Duckham, Chas. Longley, Dora Payne, &c.

CUT BLOOMS.

CLASS FOR AFFILIATED SOCIETIES.

Forty-eight Blooms, including Twenty-four Incurveds, and Twenty-four of Japanese, open to affiliated Chrysanthemum and Horticultural Societies. Two Societies entered, "The Epsom and District Chrysanthemum Society," represented by flowers from Mr. G. HUNT, Ashted Park Gardens, Epsom, and "The Bromley and District Chrysanthemum Society," represented by Messrs. KING, LEES, PASCOE, BLICK, DOVE, LYNE, and STRUT, and they won in the order mentioned. Mr. HUNT was easily 1st with Incurveds, and the Japanese were collectively superior to those of his competitors, which is noteworthy and deserving of credit. Among the incurveds, Hanwell Glory (refined, well-finished bloom), Violet Tomlin, Mrs. F. Judson, Miss E. Seward, and Duchess of Fife deserve mention; while Bessie Godfrey, Mafeking Hero, Duchess of Sutherland (a magnificent flower), F. S. Vallis, and Sensation were commendable among the Japanese. The 2nd prize group contained some excellent examples, Annie Hill, Madame G. Bruant, Mrs. Judson, and Louisa Giles (scarcely developed to perfection) among the incurveds; and Duke of Devonshire, Madame Paolo Radaceli, and Chenon de Leche among the Japanese are worthy of mention.

OPEN CLASSES.

JAPANESE VARIETIES.

Forty-eight Japanese Blooms, distinct.—There were eight entries, and this was one of the most keenly contested classes in the show, each exhibitor being well represented, in fact there was not a weak stand in the whole class. The judges gave the 1st honours to A. TATE, Esq., Leatherhead (gr., Mr. W. Mease), who had a grand collection of flowers. Madame Paolo Radaelli, Mrs. Greenfield, Mrs. J. Dunn, Le Grand Dragon (a good flower), Mr. T. Carrington, Geo. Lawrence, Camden, Mermaid, F. S. Vallis, Miss Olive Miller, Mafeking Hero, Nellie Pockett, Lord Ludlow (excellently shown), Miss A. Byron, Australie, Duchess of Sutherland (one of the best flowers in this class), Mrs. Hummel, Madame C. Nagelmachers, Matthew Smith (a well-developed flower), Mrs. H. Weeks, Lady Conyers, General Hutton, Madame Carnot, Daphne, Mrs. F. S. Vallis (splendid colour), Donald McLeod, Beauty of Sussex, Lord Salisbury, Edith Smith, Godfrey's King, W. A. Etherington, Edwin Molyneux (still one of the richest coloured Chrysanthemums), Bessie Godfrey (first-class bloom), Mrs. Grimwade, Sensation, Mrs. J. Bryant, Miss E. Fulton, M. L. Remy, Mrs. Barkley, Madame G. Debric, Ethel Fitzroy, W. R. Church, J. R. Upton, Mons. Chenon de Leche (a most meritorious bloom), Hon. Mrs. Acland, Henry Stowe, Mrs. Mease, and Alfriston. JOHN BALFOUR, Esq., Harlow, Essex (gr., Mr. A. Jeffries), was 2nd, showing Mons. L. Remy, F. S. Vallis, Cheltoni, Mons. Chenon de Leche, Lord Ludlow, Duchess of Sutherland, &c., in perfect condition. 3rd, PANTIA RALLI, Esq., Epsom (gr., Mr. G. Hunt). The variety C. J. Salter was excellent in this group.

Twenty-four Blooms, distinct.—This class was keenly contested, there being no fewer than seventeen competitors. Quality ran high through the whole of these exhibits, and extreme care was required to award the prizes, which included the President's Special Prize of five guineas. J. B. HANKEY, Esq., Fitcham Park, Fitcham (gr., Mr. W. Higgs), was placed 1st with the varieties Duchess of Sutherland (a perfect bloom, of rich deep-yellow colour), Hero of Mafeking, Edith Smith, Mildred Ware, Lieut.-Col. Dueroiset, Geo. Lawrence, Lady Mary Conyers, Maud du Cros, Mrs. F. S. Vallis, Mrs. Mileham, Bessie Godfrey, Godfrey's Pride, A. L. Stevens, Madame Carnot, S. T. Wright, F. S. Vallis, Mrs. H. Weeks (a lovely flower), Miss Olive Miller, Mr. A. R. Knight, President Viger, Mrs. J. I. Thorneycroft, Geo. Penfold, Mrs. H. Emmerton, Madame Paola Radaelli. The 2nd prize was won by Mrs. MONTAGU LEWIS HILL, Woodside, Maidenhead (gr. Mr. W. Hammond). Flowers in this exhibitor's stand were also well developed. Particularly good were Bessie Godfrey, F. S. Vallis, Sensation, Mrs. F. S. Vallis, J. R. Upton, and Kimberley. 3rd, Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), whose best flowers were Ernest Pettesworth, Mrs. H. Weeks, Bessie Godfrey, and F. S. Vallis.

Twelve Blooms, distinct.—There were as many as twenty-six entries, causing, as may be imagined, keen rivalry for the premier prizes. Mrs. JEREMIAH LYON, Riddings Court, Caterham Valley (gr., Mr. G. Halsey), succeeded in gaining the 1st place with the varieties Miss Mildred Ware, Bessie Godfrey, Gustave Henry, F. S. Vallis (colour well developed), Madame Paolo Radaelli (an excellent flower), W. R. Church, Mrs. F. S. Vallis, Mrs. Mease, General Hutton, Elsie Fulton, Australie, and Lord Ludlow. The 2nd prize was awarded to COLIN F. CAMPBELL, Esq., Sevenoaks (gr., Mr. W. Tebay), whose twelve flowers were excellent specimens, especially those of the varieties Bessie Godfrey, F. S. Vallis, and Gustave Henri. 3rd, J. WARREN, Esq., Capel House, Waltham Cross (gr., Mr. W. Ring). Marquess V. Venusto and F. S. Vallis were prominent. 4th, Hon. Justice SWINFEN-EADY, Weybridge (gr. Mr. James Lock).

One Vase of five white Blooms of one variety only.—These were shown with Chrysanthemum foliage added, on separate stems. Among half a dozen exhibitors COLIN CAMPBELL, Esq. (gr., Mr. W. Tebay), was an easy 1st with Madame Gustave Henri. These flowers were excellent, and were well balanced in regard to size. The Hon. W. F. SMITH, M.P., Greenlands, Henley-on-Thames (gr., Mr. Perkins), was 2nd with blooms of Madame Herrewége. 3rd, JOHN BALFOUR, Esq., Moor Hall, Harlow, Essex (gr. Mr. A. Jeffries), with the variety "The Princess."

Five Flowers of any yellow variety.—There were eleven entries, JOHN BALFOUR, Esq., winning with the variety

F. S. Vallis, which was shown, as indeed it was generally in the show, in first-class style, the rich colour being well developed. 2nd, Colonel BOWLES, M.P., Enfield (gr. Mr. H. Smith), with same variety as won 1st prize. 3rd, Mrs. G. M. FAULKNER, Fonthill Lodge, Forest Hill, S.E. (gr., Mr. Chas. Bellis), who staged the variety Bessie Godfrey.

Five Flowers of one variety of any other colour than white or yellow.—JOHN BALFOUR, Esq., was again successful in gaining 1st honours with five splendid flowers of Mrs. Barkley, there being not a weak flower among the five. 2nd, A. TATE, Esq., Downside, Leatherhead (gr., Mr. W. Mease), with the variety Miss Olive Miller. 3rd, Hon. W. F. D. SMITH, with flowers of Lady Conyers, possessing excellent colour.

INCURVED VARIETIES.

Thirty-six Blooms distinct.—Three growers competed, J. B. HANKEY, Esq., being an easy 1st with excellent quality in form, size, and colour. Among the three dozen we select Charles Curtis, Duchess of Pife, Miss Annie Hills, Doris Raynor, Ialene, Pantia Ralli, Nellie Southam (excellent colour), Hanwell Glory, Lady Isabel, Mrs. J. Bryce, and Nellie Threlfall. A. TATE, Esq., Leatherhead (gr., Mr. W. Mease), was 2nd, whose flowers showed excellent form and colour, but had hardly the substance of the 1st prize collection, still this exhibitor had the satisfaction of being awarded the prize for the premier flower of the variety Mrs. Judson; others in this section that were high-class were Lady Isabel, Topaze Orientale, Duchess of Pife, C. H. Curtis, and Lord Alcester. 3rd, PANTIA RALLI, Esq., Epsom (gr., Mr. G. Hunt). The 1st prize in this class included one of the Holmes Memorial Cups.

Twelve Flowers, distinct.—Nine exhibitors competed in this class, and J. B. HANKEY, Esq., gained 1st prize with the varieties Duchess of Pife, W. Biddle, Ialene, Lady Isabel (a splendid example), Major Bonnaillon (also a good bloom), C. Blick, Madame Bruant, Mrs. Jones, Countess of Warwick, Empress of India, Chas. Curtis, and W. Higgs. 2nd, Sir A. HENDERSON, Bart., M.P., Buscot Park, Faringdon (gr., Mr. W. L. Bastin), whose best flowers were of the varieties Duchess of Pife, Miss Mildred Lyne, Globe d'Or, &c. 3rd, W. W. MANN, Esq., Ravenswood, Bexley, Kent (gr., Mr. John Simon).

Six Blooms of one variety.—Sir A. HENDERSON, Bart., M.P., was placed 1st with six excellent blooms of Duchess of Pife: the variety Hanwell Glory obtaining 2nd prize for Mrs. JEREMIAH LYON. 3rd, J. AUERBACH, Esq., Hethersett, Reigate (gr., Mr. W. M. Blackwood). There were five competitors in this class.

CHRYSANTHEMUMS IN VASES.

The great Vase Class as usual called for twelve vases of specimen blooms of twelve varieties of Japanese Chrysanthemums, five flowers in each vase. The premier prize of 12 guineas was offered by the Crystal Palace Company. There were four entries, and in these exhibits there were some excellent blooms. Sir W. G. PEARCE, Bart., Chilton Lodge, Hungerford (gr., Mr. Chas. Beckett), was placed 1st, with the varieties Henry Perkins, Miss E. Shrimpton (excellent flowers), Mrs. J. Bryant, Mrs. J. Hadaway, W. Duckham (the form of these was perfect), Mrs. F. S. Vallis (five noteworthy blooms in every respect), Paolo Radaelli, J. R. Upton, Mrs. Barkley, Mrs. H. Weeks, Mrs. F. S. Vallis, and Bessie Godfrey. The 2nd prize was awarded to MARK FIRTH, Esq., Wiston Hall, Leicester (gr., Mr. Frank J. Clark); good blooms again obtained in this collection, F. S. Vallis being specially meritorious, Miss Mildred Ware, Madame Waldeck Rousseau, Mafeking Hero, and Miss Olive Miller were the most noteworthy specimens. The 3rd prize was awarded to W. J. NEWMAN, Esq., Totteridge Park, Totteridge (gr., Mr. J. Brooke); Mary Inglis, Mrs. G. Mileham, and F. S. Vallis were the best blooms in this collection. 4th, H. O. LORD, Esq., Cheltenham (gr., Mr. Frank May).

Six vases of Incurved Blooms in six distinct varieties.

—In this class the prizes were given by the Ichthemio Guano Company, Ipswich. J. B. HANKEY, Esq., Fitcham Park, Fitcham, was 1st with Topaze Orientale, Lady Isabel (an excellent flower), and Mrs. J. Seward. 2nd, PANTIA RALLI, Esq., Ashted Park, Epsom (gr., Mr. G. Hunt), whose flowers were of good form and well balanced. The variety Duchess of Pife was shown in perfection. 3rd, Sir A. HENDERSON, Bart., M.P., Faringdon (gr., Mr. W. L. Bastin).

OTHER TYPES.

REFLEXED FLOWERS.

The class for *Twelve large-flowered "reflexed" Blooms*, brought three exhibits. The following exhibitors A. G. MEISSNER, Esq., Weybridge (gr., Mr. T. Caryer), R. HENTY, Esq., Abbots Langley, Herts (gr., Mr. Chas. Brown), and J. L. BURGESS, Esq., Hill House, Maisey, Hampton-in-Fairford, respectively, who were awarded prizes in the order named. The 1st prize exhibit was far ahead of the others in point of merit. The varieties Miss F. Lunn, Clara Jeal, Cullingfordi, &c., were among the best of the varieties shown.

Twenty-four large-flowered Anemone, distinct.—The competition was limited to two exhibits, resulting in H. H. PLATTEN, Esq., Harwood Hall, Upminster, being placed 1st; with R. HENTY, Esq., 2nd.

Twelve Anemone-flowered, distinct.—R. HENTY, Esq., won the 1st prize for twelve Anemone-flowered blooms; while Mr. PLATTEN was 1st with twelve large-flowered Japanese Anemone blooms; Mr. HENTY being again awarded the 2nd prize.

POMPONS.

Nine Pompons, distinct, Six Blooms of each variety, to be shown as Bunches in Vases.—This pretty type was only represented by three exhibits. The 1st prize was awarded A. G. MEISSNER, Esq., Aldenholme, Weybridge (gr., Mr. T. Caryer), who had the varieties Mille. Elise Dordan (having this old favourite in exquisite form), President (a rich magenta-coloured flower), William Westlake (of rich yellow colour), Prince of Orange, Mr. Holmes, and Mille. Marthe. Mr. HENTY was awarded the 2nd prize, having Prince of Orange in fine condition; also Mille. Elsie Dordan, William Westlake, Comte de Morny, &c. 3rd, J. T. BURGESS, Esq., Hampton-in-Fairford, Gloucester (gr., Mr. J. Humphries).

SINGLE-FLOWERED VARIETIES.

Six varieties of Single Chrysanthemums, Six Blooms of each variety.—Competition was weak in this section, although it is one of the loveliest type of all Chrysanthemums. Only three exhibits were staged, those from J. COURTNEY, Esq., Weybridge (gr., Mr. W. C. Pagram), Mr. W. J. NEWMAN, Totteridge, and from Mr. HENTY, Abbots Langley, who were placed 1st, 2nd, and 3rd respectively. Mr. COURTNEY staged Edith Pagram (of large substance and pleasing rosy-purple colour, petals with white flakings, and an excellent eye), Eureka, A. Farina (dark purple in colour), Pink Beauty (the best flower in the section, with soft rose-tinted petals), Elsie Melville, and Grace. Mr. HENTY showed good flowers of Miss G. C. Warden and Miss S. A. Robbins. The latter has yellow ground petals, the ends and margins assuming a reddish-bronze tinge of colour.

FLORAL DECORATIONS.

Miss FAIRWEATHER, Bifrons, Canterbury, won the 1st prize for three epergnes of Chrysanthemum blooms with appropriate foliage suitable for table decoration in the open classes. Mrs. BREWSTER, Canterbury, was 2nd.

Mrs. BREWSTER was 1st for two bouquets of Chrysanthemums with very simple designs, but highly effective and pretty.

The best basket of berries and autumn foliage was put up by Miss C. B. COLE, Feltham; fruits of Iris, Snowberry, Clematis, Honesty, Cotoneaster, &c., were blended with good taste. Miss COLE also beat all other exhibitors with her basket of Chrysanthemums arranged with foliage, and suitable for placing on the table.

TRAINED PLANTS.

The best Single Trained Plant was shown by Col. BOWLES, M.P., Enfield (gr., Mr. H. Smith), whose variety, John Shrimpton, bore several dozen excellently developed flowers.

For Four Trained Specimen Plants, Mr. G. H. COOPER, nurseryman, Croydon, received the 1st prize. He was the only exhibitor in the class.

For Four Trained Specimen Pompon Plants, F. W. FREIR, Esq., Ponder's End, Enfield (gr., Mr. F. Gilks), was awarded 2nd prize being the only entry.

There were two exhibits in the class for six plants, trained as bushes, of large-flowering varieties. That obtaining 1st prize came from Mr. H. Smith, gr. to Colonel BOWLES, Forty Hall, Enfield. Its varieties included Souvenir d'un Petit Ami, Amy Ensoll, and John Shrimpton. 2nd, Mr. G. H. COOPER, florist, 152, Sydenham Road, Croydon.

AWARDS BY THE FLORAL COMMITTEE.

Upwards of fifty varieties were submitted to the Floral Committee for Certificate, and we believe that First-class Certificates were awarded to the varieties following; but after the awards were made the flowers were distributed in one place and another that it was next to impossible to find all of them.

Chrysanthemum Margaret Brown.—A large incurved flower, rose coloured with silvery reverse. Shown by Mr. W. SEWARD, Hanwell.

Mrs. A. H. Lee.—This is a very large Japanese flower of rich crimson colour; most of the florets are reflexed, and show but little of the bronze colour of the reverse side. Shown by Mr. R. MOLYNEUX, Rookesbury Park Gardens, Hants.

Miss Elsie Miller.—The flowers are similar in form to those of the variety *Mrs. Mease*. The florets are narrow and reflexed. In colour they are pale rosy-purple.

Mrs. A. T. Miller.—A first-class incurved Japanese with broad, pure white florets. The two varieties above were shown by Mr. GEO. MILEHAM, Emlyn House Gardens, Leatherhead.

Miss Tackey Bird.—This is a large creamy-white single flower. Shown by Mr. REDDER, Manor House Gardens, West Wickham.

W. Gooding.—This is a very good Japanese variety with large, deep flowers. The florets are reflexed, of considerable width and moderate length. The colour is reddish-pink. It is said to be from a cross between the varieties *Mildred Ware* and *Hon. Mrs. Aeland*. A plant was shown carrying three very fine flowers. Shown by Mr. T. BULLINORE.

W. A. Elthrington.—A very large Japanese variety of extra width and depth. Colour pink; central and younger florets white. Shown by Mr. W. J. GODFREY.

G. F. Evans.—A large yellow-coloured incurved variety, the florets have rather pointed tips, but the flowers promise to be of value in the section for "Incurvols."

Emblème Poitevine. This is another yellow-coloured incurved variety, the flowers of which in form somewhat resemble those of the variety *C. H. Curtis*. The florets are hirsute.

Buttercup.—An incurved or Japanese incurved variety, with much broader florets than those of either of the two varieties just described, in colour rich yellow. The florets may prove to be sufficiently incurved for exhibition in that section. The above varieties were shown by Mr. W. J. GODFREY.

AMATEURS.

SECTION A.

Eighteen Japanese Blooms, distinct.—There were but three entries in this class, but the 1st prize was given to a really fine display staged by A. F. BLADES, Esq., Brookfield, Reigate (gr. Mr. F. Cordill). We may mention as a selection of the better flowers *Marquis V. Venosta*, F. S. Vallis, *Bessie Godfrey*, *Master C. Seymour*, *Mrs. Mease* (an excellent example), *Mrs. G. Mileham*, *Miss Lucy Evan* (of good colour), and *F. A. Cobbold*. 2nd, D. LIX, Esq., Fairlight, Beckenham (gr., Mr. Trowell). *Duchess of Sutherland* was excellently well shown; *Godfrey's Pride* was also noticeable. 3rd, Mrs. G. M. FAULKNER, Forest Hill (gr., Mr. Chas. Bellis).

Twelve Japanese Blooms, distinct.—This class evoked greater competition than that for twenty-four blooms, seven competing. The 1st prize group was far ahead of the other exhibits in this class, and included a dozen really first-class flowers. They were put up by A. F. BLADES, Esq., Brookfields, Reigate (gr., Mr. F. Cordill) the varieties being *Marquis V. Venosta* (a highly developed flower), F. S. Vallis, *Mildred Ware* (excellent), *Bessie Godfrey* (one of the best examples of this variety in the show), *Mrs. R. Darby*, *Mrs. A. Nagelmackers*, *Mrs. G. Mileham*, *Mrs. Mease*, *Lord Ludlow*, *Mad. G. Henry*, *Mathew Smith*, and *W. A. Elthrington*. There was not a weak flower in the whole of this display. 2nd A. KEMPT, Esq., 15, Ross Road, South Norwood, who also had some excellent flowers, "*W. R. Church*" being especially worthy of mention. 3rd F. S. WIGRAM, Esq., Elstow, Bedford (gr., Mr. H. Pestell).

Twelve Incurved Blooms.—There was only one exhibit, that from J. L. BURGESS, Esq., Maisy, Hampton-in-Pairford, Glos., who was given the 1st prize. *Globe d'Or* was small but otherwise excellent. *Topaze Orientale* and *Miss A. Hill* deserve mention.

Six Japanese Blooms distinct.—Seven exhibits were presented, A. F. BLADES, Esq., Brookfields, Reigate (gr. Mr. F. Cordill), was placed 1st with *Mildred Ware*, *Bessie Godfrey* (the best specimen in this collection), F. S. Vallis, &c. 2nd, A. KEMPT, Esq., South Norwood (gr. Mr. Osmond).

Six Japanese Blooms, one Variety.—This was poorly represented by "*Miss M. Pockett*," staged by F. VIGERS, Esq., The Beeches, Wray Lane, Reigate (gr. Mr. W. Leppard).

Six Incurvols, distinct was represented by three exhibits, two displays being very feeble. Mr. A. KEMPT was given 1st prize for, by far, the best group. C. H. Curtis was shown in good form, as was also *Nellie Southam*.

Mr. KEMPT surpassed all other competitors in the class for six incurved blooms of one variety, with excellent examples of the variety *C. H. Curtis*. 2nd, Mr. VIGERS, with the variety *Baron Hirsch*.

SECTION B.

The class for Eighteen Japanese Blooms, distinct varieties, brought three exhibits, but the quality in the flowers was not equal to that in a similar class in Section A. Mr. A. R. KNIGHT, 63, Hardinge Road, Asford, Kent, brought the premier stand of flowers, having *Mrs. Emmerton*, *Godfrey's Pride*, *Bessie Godfrey*, *Mafeking Hero*, *Lady Beaumont* (this flower was an excellent example), *Mrs. Mileham*, &c. The 2nd prize was secured by Mr. J. T. BOWN, 142, Manchester Road, Swindon. *Mrs. G. Mileham* was shown well. 3rd, Mr. H. C. HAWKINS, Westcombe Park Road, Blackheath.

Twelve Japanese Blooms, distinct.—This class also brought three exhibits, and the quality of the specimens was better than in the last-named class. Mr. THOS. SHARPE, Railway Terrace, Stone, Greenhithe, Kent, was successful with *Lady Conyers*, F. S. Vallis, Gen. Hutton (well-grown specimen), *Phyllis* (another meritorious flower), *Madame Paolo Radaelli*, *Princess Henry*, &c. 2nd, Mr. C. M. COLLINGWOOD, St. David's Hill, Exeter.

Twelve Incurved Blooms.—This class was represented by one exhibit only, which was, however, of excellence throughout. The flowers showed refinement in form and colour. As a selection we may mention *C. H. Curtis*, *Isabel*, *Duchess of Fife* (plenty of substance, but hardly developed), and *Lady Isabel*.

Six Japanese Blooms, distinct.—Mr. T. SHARPE, 1, Railway Terrace, Stone, Greenhithe, Kent, was 1st. Mr. J. T. BOWN, 142, Manchester Road, Swindon, 2nd.

The 1st prize for Class 55, six Japanese in three varieties, two blooms of each variety, also fell to Mr. SHARPE for *Madame Paolo Radaelli*, *Mrs. A. McKinley*, and *Nellie Pockett*. 2nd, Mr. JOHN THOMSON, Coventry Road, Ilford. The last-named exhibitor was 1st for six incurved blooms, reversing the preceding order with Mr. SHARPE, who was placed 2nd.

"MAIDEN" EXHIBITORS.

There were two classes reserved for cultivators who had not previously exhibited at the Society's show.

Six Japanese Blooms, distinct, brought five fresh exhibitors to the Society, and in *WESLEY MARSHALL*, Esq., Broadlees, Reigate (gr., Mr. W. Pottle), they have one who is evidently an excellent cultivator of the *Chrysanthemum*, for his group was excellent.

In the class for incurvols there was only one exhibit.

FRUIT.

There were classes arranged for Grapes and for hardy fruits. The principal exhibits in these were those following.

The best exhibit of three bunches of *Muscot* of Alexandria Grapes were shown by Mr. W. Taylor, gr. to C. E. BAYER, Esq., Tewkesbury Lodge, Forest Hill. There were four entries.

The best three bunches of *Gros Golmar* Grapes came from Mr. TAYLOR; and the best exhibit of *Black Alicante* Grapes from Mr. A. B. WATDS, gr. to Sir W. D. PEARSON, Bart., Paddockhurst, Crawley. Both exhibits were of capital quality.

The best six dishes of dessert Pears came from Mr. F. Ashman, gr. to C. C. D. CREWS, Esq., Billingsbear Park, Wokingham. The varieties were *Glout Moreau*, *Durondeau*, *Pitmaston Duchess*, *Gansel's Bergamot*, *Marie Louise*, and *Beurre Bosc*.

In a class for six dishes of culinary Apples there were very many exhibits, and the competition was unusually keen. The 1st prize was gained by an exhibit from Mr. W. T. Stowers, gr. to G. H. DEAN, Esq., 80, Harold Road, Sittingbourne, and the varieties

were *Gloria Mundi*, *Bismarck*, *Peasgood's Nonesuch*, *Emperor Alexander*, *Bramley's Seedling*, and *Mère de Ménage*. The fruits were exceedingly good specimens. The same exhibitor won the 1st prize for six dishes of dessert Apples, showing the varieties *King of the Pippins*, *Gascayne's Scarlet*, *Charles Ross*, *Cox's Orange Pippin*, *Rival*, and *Blenheim Orange*.

VEGETABLES.

There were thirteen classes for vegetables, in which Mr. ROBERT SYDENHAM offered prizes in each class. The produce was raised from seeds obtained from Mr. SYDENHAM. There were many competitors in each class, and the produce was excellent.

In the class for eight dishes of vegetables there were four exhibits, all of which were of very fine quality. The 1st prize was won by Mr. H. FOLKES, gr. to the Rt. Hon. T. F. HALSEY, M.P., Gaddesdon Place, Hemel Hempstead. The "*St. Valery*" Carrots were quite models. *White Stone Turnips*, *Autumn Giant Cauliflower*, *Excelsior Onions*, the *Wroxton Brussels-Sprouts*, *Bibby's Defiance Celery*, &c., were all very good. 2nd, Mr. A. BASILE, gr. to the Rev. T. McMURDIE, Woburn Park, Weybridge.

In the separate classes for distinct vegetables, the Carrots were of very high quality, the best being from Mr. FOLKES. Mr. A. BASILE had the best "*Hollow Crown*" Parsnips; Mr. H. FOLKES, the best Beet; Mr. R. A. HORSPOLL, The Gardens, Llangollen Road, Ruabon, excellent "*Lyon*" Leeks; Mr. H. FOLKES, the best Onions; Mr. A. G. Gentle, gr. to Mrs. DEMSON, Little Gaddesden, Berkhamsted, the best "*Model White Stone*" Turnips; Mr. H. FOLKES, the best "*Autumn Giant*" Cauliflowers, and the best "*Ormskirk*" Savoy Cabbages; Mr. CHAS. BROWN, gr. to R. HENTY, Esq., Langley House, Abbots Langley, the best Red Cabbage; Mr. H. FOLKES, the best "*Standard Bearer*" Celery; Mr. H. FOLKES, the best Brussels-Sprouts, and Mr. CHAS. BROWN, the best Potatoes. Prizes were also awarded to those exhibitors gaining the highest number of points in the whole of the classes. The highest number was obtained by Mr. FOLKES, who had 75 out of a possible 85; Mr. BASILE had 61; Mr. R. A. HORSPOLL, 49, and Mr. BROWN, 47.

NON-COMPETITIVE EXHIBITS.

There were numerous exhibits from trade establishments that very largely increased the attractiveness of the show. The two finest exhibits in the show were made by Mr. NORMAN DAVIS, Framfield Nursery, Uckfield, Sussex; and Mr. H. J. JONES, Ryecroft Nurseries, Lewisham. Together these exhibits furnished the end of the central transept facing the great organ. Mr. DAVIS's exhibit was arranged with very large exhibition blooms at the front, relieved with *Adiantum* Ferns. At the back were flowers and some plants of all sections of *Chrysanthemums*, so arranged as to form a "faced" group. In a line along the centre of the exhibit were *Bamboo*-stands 4 feet high, each containing a vase furnished with a dozen or more exceedingly fine flowers, with suitable relief in the way of ornamental foliage. The varieties of the "*Madame Carnot*" type were as usual in Mr. DAVIS's exhibits especially well represented, but other varieties were numerous, and included the new slightly incurving Japanese *Miss Mona Davis*, white, with lemon-coloured centre. The florets are very wide and the flowers attractive. *Lady Curzon* is another novelty, an incurved Japanese, the florets having spoon-shaped tips. In colour the flowers are rich yellow, inclining to bronze. *Mrs. Charles Davis* is an improvement on the variety *Duchess of Sutherland*, being deeper in colour (Gold Medal).

Mr. H. J. JONES's exhibit had a front composed of exhibition boxes furnished with capital flowers of the popular Japanese varieties and novelties. Behind these were single-flowered varieties and others of decorative value. Some of the blooms were displayed in bold and handsome vases, giving to the exhibit a very good effect. The disposition of the various types and arrangement of colours was capital. We cannot enumerate the varieties. It is evident that Mr. Jones will exhibit finer flowers from Keston than he could cultivate at Lewisham (Gold Medal).

HOBBIES, Ltd., Dereham, Norfolk, exhibited an immense number of blooms of exhibition *Chrysanthemums*, and vases containing decorative varieties formed a background for them. Some of the exhibition blooms were thin and lacked size, others were good (Gold Medal).

MESSRS. GEO. BUNYARD & Co., Maidstone, exhibited a grand collection of Apples and Pears, and were awarded a Gold Medal.

Mr. CASTELTON, Superintendent to the Crystal Palace Company, staged a large circular group of Chrysanthemums in the main transept opposite the great organ.

Messrs. H. CANNELL & SONS, Swanley, filled the entire side of the transept opposite the great organ, having Cannas, Zonal Pelargoniums, and about fifty exhibition flowers of Chrysanthemums, most of the later and better varieties. This exhibit was pleasingly staged and commendable in every respect. Messrs. CANNELL also filled a table with 345 distinct varieties of fruits, principally Apples and Pears, which were superb in every respect (Gold Medal).

Messrs. CHEAL & SONS, Crawley also set up an exhibit of Apples (Silver Medal).

Mr. J. W. COLE, Midland Road Nursery, Peterborough, staged a small group of specimen blooms of Chrysanthemums (Bronze Medal).

Mr. W. J. GODFREY, nurseryman, Exmouth, had an imposing exhibit of Chrysanthemums, principally of the exhibition class of flower. The group was staged with great taste, and included evergreens of many of the choicer varieties, all well grown, and set off with suitable decorative foliage. A number of the smaller-flowering type occupied one end of the stand (Gold Medal).

Messrs. JOHN LAING & SONS, Forest Hill, London, set up a circular group of Chrysanthemums in pots, tastefully arranged, and containing some creditable blooms. Messrs. LAING also staged a meritorious collection of Apples (Silver-gilt Medal).

Messrs. T. ROCHFORD & SONS, Turnford Hall Nurseries, Broxbourne, showed an unique exhibit of retarded plants in flower. *Azalea mollis*, *Astilbe* (*Spiraea*) *japonica*, *Lily of the Valley*, *Lilium longiflorum*, *auratum*, *tigrinum* *Fortunei*, *tigrinum* *splendens*, &c.; also *Laburnum* and *Lilac*.

Messrs. GREGORY & EVANS, Longlands Nurseries, Sidcup, Kent, staged a large group of their new Heath, *Erica gracilis nivalis*, backed by a number of the type *E. gracilis* (Silver-gilt Medal).

Mr. DAVID RUSSELL, Essex Nurseries, Brentwood, set up a circular group of ornamental shrubs and Conifers (Silver-gilt Medal).

Messrs. CUTBUSH & SONS, Nurserymen, Highgate, London, set up a group under the great organ of mixed flowering plants, *Ericas*, *Liliums*, *Azaleas*, and other retarded plants, many hardy flowers, *Carnations*, &c. This group was well staged, and highly effective (Gold Medal).

Messrs. J. AMBROSE & SON, Nurserymen, Cheshunt, Herts, staged an exhibit of greenhouse plants, *Cyclamens*, *Carnations*, *Lily of the Valley*, *Begonias*, *Liliums*, &c., also a number of the smaller-flowering Chrysanthemums. The whole collection was relieved with Palms, Ferns, &c. The same firm exhibited fruit, including their new Grape Melton Constable, which was awarded a First-class Certificate (Gold Medal).

Messrs. CLIBRANS, Ltd., nurserymen, Altrincham and Manchester, staged ninety vases of single-flowering Chrysanthemums in nearly fifty varieties, making a most charming display. Many new seedlings were included, among which we noticed Mr. E. Roberts (Silver-gilt Medal).

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 27.—At the meeting held on this date there was not a large display, but several plants of interest were exhibited.

E. ROGERSON, Esq., Didsbury (gr., Mr. Blomley), staged a fine and showy group of plants, including several plants of the beautiful white *Cattleya* × *Hardyana*, one white *Cattleya labiata* variety autumnalis, &c. *Cypripedium* × *bingleyensis* var. *Thomas Rogerson* was voted an Award of Merit. A Silver-gilt Medal was awarded to the group.

E. BOSTOCK, Esq., Stone, Staffs, exhibited two hybrid *Cypripediums*.

J. LEEMANN, Esq., Heaton Mersey (gr., Mr. Edge), was given a First-class Certificate by an unanimous vote for *Sophro-Cattleya* × *Doris*, a charming hybrid between *Sophranitis grandiflora* and *Cattleya aurea*.

CHAS. PARKER, Esq., Ashton-on-Ribble, gained an Award of Merit for *Cypripedium* × *Milo* var. *Prestona*.

Messrs. STANLEY & CO., Southgate, London, exhibited *Cattleya* × *Fabia* var. *Marie de Wavrin* superba, a good hybrid between *Cattleya labiata* var. *alba* and *C. aurea* (Award of Merit).

Messrs. KEELING & SONS, Westgate Hill, received an Award of Merit for *Cypripedium* × *Goultenianum*.

Messrs. CYPHER & SONS, Cheltenham, displayed a bright and well-grown group of plants of varied character, for which a vote of thanks was given: a

imilar Award being made to Messrs. COWAN & SONS, Gateacre, and Messrs. KEELING, Bradford, for groups.

I omitted to mention in my last report that Mr. DUCKWORTH, of Flinton, exhibited his unique plant of *Lalia Perrini alba* in magnificent condition, with four flowers on the spike. P. W.

BRIGHTON AND SUSSEX HORTICULTURAL.

NOVEMBER 1, 2.—The twenty-second annual exhibition of Chrysanthemums was held on the above date in The Dome and Corn Exchange, the latter being quite filled and the former partially with the various exhibits, including besides the Queen of autumn flowers a few Orchids, some Chinese *Primulas* in single and double-flowered varieties, berried *Solanums*, table plants, *Begonias*, *Carnations*, tables of mixed flowering plants, variegated and berried shrubs, and a good deal of hardy fruit, vegetables, Potatoes, Grapes, and Tomatoes.

(A fuller report will follow next week.)

BOTANICAL LECTURES AT CHELSEA.

THE concluding lecture by Sir William Thiselton-Dyer, K.C.M.G., LL.D., F.R.S., Director of the Royal Gardens, Kew, on "Modern Botany and its Problems," was delivered at the Chelsea Physic Garden on Wednesday, November 2, when the mode of ingress and function of the mineral constituents of plant food were dealt with.

It was pointed out that, although Sir Humphry Davy was the first investigator of this subject, it was to Liebig, who took up its investigation in the middle of the 19th century, that belonged the credit of laying the foundation of our modern knowledge. Plants take up their mineral substances dissolved in water; and it was shown that this is an enormous advantage to the plant, since water has the greatest specific heat of any known substance, and it thus affords protection from the great changes in temperature to which plants are subjected.

The difference between osmosis and diffusion was dealt with, and experiments were cited to show that crystalloid substances in solution pass readily through a closed membrane, whereas jelly-like substances, called "colloids," cannot readily pass.

Phosphorus was dealt with and the importance of manures containing phosphorus in agricultural work referred to.

Silica seems to have no direct function in the economy of the plant, but may be harmful if in excess.

Lawes found that by giving Wheat plants potash in minute quantities it was repeatedly used in the work of the plant, and at the finish still found in the grain.

Calcium would appear to have something to do with the composition of proteids. At Kew an American Oak annually bears white foliage on one of its branches. The leaves were analysed by Church, and it was found that the ash was rich in potash and poor in lime. The action of calcium in getting rid of oxalic acid was also referred to. Magnesium plays the part of carrier of phosphoric acid.

LAW NOTE.

DUTCH BULBS.

IN the Wandsworth County Court, on Wednesday, October 26, before his Honour Judge Russell, an action was brought by Messrs. Van Til-Hartman, Bulb Growers, Hillegom, Holland, to recover the sum of £26 from Mr. K. Drost, Nurseryman, Richmond, for Tulip-bulbs supplied. Mr. Drost raised a counterclaim for £15 for labour, &c., wasted on bulbs that failed.

Counsel for plaintiffs stated that the bulbs had been supplied under their "Terms of Business," as printed in their catalogue, and which are those of the Dutch Bulb Exporters' Association. These include the following conditions:—"Claims as to the quality of the goods cannot be entertained unless made immediately on receipt of

same. The members of the Association give no warranty, express or implied, and will not be in any way responsible for the results of planting or forcing of any bulbs or roots sent out." Defendant refused payment on the ground that the bulbs had all failed through an attack of Tulip-mould (*Botrytis parasitica*), the genus of which must have been present in the bulbs before they were planted, from the fact that no Tulips had previously been grown in the soil, and that other Tulips planted in ground near those supplied by plaintiffs were not diseased. Mr. Watson, Curator, Royal Gardens, Kew, gave evidence in support of defendant's contention.

His Honour ruled, however, that even if the bulbs supplied by plaintiffs had been diseased when received by defendant, as he had failed to detect it and did not complain at once to plaintiffs, the terms of business on which this firm stated that the bulbs were supplied entitled them to payment. Buyers should always take care to ascertain exactly the terms on which goods were supplied.

We are informed that some of the Dutch bulb dealers do not do business on the terms of the Dutch Bulb Exporters' Association.

Obituary.

WE greatly regret to have to announce the death at Laeken, near Brussels, on the 29th ult., of M. Louis-Josse Draps-Dom. The deceased gentleman was well known as a first-class cultivator, and his exhibits of stove plants and Orchids always attracted attention.

TRADE NOTICE.

WE understand that Mr. J. P. Carter, of Frieston, has sold his 1905 crop of Johnson's new early Potato "The Pearl" at £1,000 per ton to a firm who is interested in the Channel Islands trade. At the Boston Agricultural Society's show on Wednesday last "The Johnson" Five Guinea Solid Silver Cup for Potatoes was won by Mr. W. R. Porter, of Willoughby House, Boston. This Cup is won outright the first year, and particulars of next year's competition are obtainable from the donors, Messrs. W. W. Johnson & Son, Ltd., of Boston.

ANSWERS TO CORRESPONDENTS.

* * * EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Library department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BEDDING-OUT: H. J. We do not know of any separate book on this subject, but you might refer to *Cusell's Popular Gardening*, or any of the books on general gardening.

BOOKS: D. J. *Elementary Botany*, by Percy Groom, M.A., published by George Bell & Sons, London.

CAPITAL: Nursery. It is impossible to give you detailed information, which you must obtain from some one who knows the locality. As a general rule you should have sufficient capital to buy the land and stock and to work it for two years.

CARBOLIC ACID: Brookwood. The local chemist will tell you the cost of the acid. You may make it as strong as you like, because there is presumably nothing on the walks that you do not desire to kill; but do not use less than 2 oz. of acid to each gallon of water. After the liquid has been applied you should keep fowls and other live stock from the paths; and remember you are dealing with a corrosive poison.

CHRYSANTHEMUM SPORT: *F. C.* If the cutting was obtained from a plant of the variety *Mrs. Hanham*, the flower you send is clearly a sport, and belongs to the *Anemone*-flowered section, the flowers of which possess disc florets unusually well-developed. It appears to be rather rough in appearance and therefore of little value as a new variety; but this fault may not be so evident after the variety has been cultivated another season.

CHRYSANTHEMUM: *J. C. B.* Probably the result of over-growth from over-feeding. If you over-feed a plant or an animal you must expect it to suffer.

CUCUMBER SOIL: *M. L.* Your loam appears to be of a very desirable character; although somewhat on the light side, it contains plenty of good fibre, which is a valuable source of humus. We cannot state if it is deficient in lime without analysis, but this element is rarely deficient in maiden soils. The value lime has in manuring is to neutralise the injurious acids or to set free the plant food in the soil. Cucumbers are gross feeders, and layers of farmyard manure should alternate with those of the turf. When building your turf heap it would be an easy matter to incorporate some lime at the same time.

DATURA: *G. H. E.* The grub is that of one of the weevils. Trap them with slices of Potato or Carrot. The plant appears to be in good health.

FERNS: *F. B.* We think it not unlikely the Ferns are suffering from exposure to the electric light. Either the lights are too near or they are not sufficiently shaded.

FREE-GROWING ORCHIDS: *Essex.* *Cæloglyne cristata*, *Cypripedium insigne*, *Lycaste Skinneri*, *Cattleya labiata*, *Cymbidium Lowianum*, *Lælia anceps*, *L. purpurata*, *Sophranitis grandiflora*, *Zygopetalum Mackayi*, *Oncidium incurvum*, *Oncidium tigrinum* and *Dendrobium nobile*. These are showy and easy to grow and would probably do to begin with. *The Book of Orchids*, by W. H. White, price 2s. 9d., post free, from our Publishing department.

FRENCH BEANS: *Reader.* The variety "Progress" was raised by Mr. George Wythes from a cross between the varieties *Mohawk* and *Canadian Wonder*. "Progress" will fruit earlier than *Canadian Wonder*, and produces large, broad pods. It has a stronger constitution than *Mohawk* possesses, but is dwarfier than *Canadian Wonder*. "Progress" is an excellent variety, and if you find that *Canadian Wonder* is unsatisfactory with you, you should certainly give the newer sort a trial. *Ne Plus Ultra* is well known to be first-rate, and *Early Favourite*, obtained from a cross between *Mohawk* and *Veitch's Ne Plus Ultra*, is specially recommended by Mr. Wythes as a good variety for forcing. The Fruit and Vegetable Committee of the Royal Horticultural Society has given the last-named variety two awards—one for excellence under forcing treatment, and the other when specimens were exhibited from an out-door crop.

GAGE PLUM. *Rust.* Your leaves from a tree of the variety *Denniston's Superb*, are infested with the ordinary Plum-tree Rust, *Puccinia pruni*. All diseased leaves should, if possible, be collected and burnt, to prevent dissemination of the spores. Early in spring, on the opening of the leaf-buds, syringe the tree with Bordeaux-mixture, and repeat after a week or ten days, in order to kill any spores which may have survived the winter.

LYCASTE LANIPES FAILING TO FLOWER: *T. B.* The plant has been kept in too warm and too moist an atmosphere. Place it in a cool well-ventilated intermediate-house, and do not afford water so freely.

MUSHROOMS: *J. M. D.* What you send are true Mushrooms, although deformed, we cannot tell why.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to

encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in this issue are requested to be so good as to consult the following numbers:—

J. T. 1, very small, not recognised; *2*, Cox's Orange Pippin; *3*, too small; *4*, Alfriston; *5*, Ecklinville Seedling.—*H. L. 1*, King of the Pippins; *2*, Cox's Orange Pippin; *3*, Lady Henniker; *4*, Flat Cap; *5*, Small's Admirable; *6*, Broad-End.—*H. T. 1*, Mère de Ménage; *2*, Warwick Pippin; *3*, Cox's Orange Pippin; *4*, Cox's Pomona; *5*, Ecklinville Seedling; *6*, Royal Russet.—*A. M. D. 1*, Hollandbury; *2*, Cheshunt Pippin; *3*, King of the Pippins.—*T. H. S.* The fruit had decayed.—*R. W. Cox's Pomona*.—*Trehane*. Fearn's Pippin.—*A. G. R. 1*, Ecklinville Seedling; *2*, Scarlet Golden Pippin.—*H. V. 1* and *2*, Cox's Orange Pippin; *3*, Duchess of Oldenburgh; *4*, Warner's King; *5*, Pear, Fondante d'Automne; *6*, Winter Nelis.—*C. Collings*. London Pearmain.—*J. Fulford*. *1*, Flower of Kent; *2*, Brabant Bellefleur; *3*, a very nice Apple, but not recognised; *4*, Brownlee's Russet; *5*, Belle Dubois; *6*, Van Mons. Leon Leclerc.—*D. R. 1*, Uvedale's St. Germain; *2*, Catillac; *3*, Beurré d'Amanlis; *4*, Cellini Pippin; *5*, a very fine fruit of Blenheim Orange; *6*, Queen Caroline.—*A. B. 1* and *2*, Pitmaston Duchess; *3*, Conseiller de la Cour; *4*, Bergamot d'Esperen; *5*, Brockworth Park; *6*, Bramley's Seedling.—*T. Harris*. *1*, Cornish Aromatic; *2*, Royal Russet; *3*, Lane's Prince Albert; *4*, Summer Strawberry; *5*, Keswick Codlin; *6*, Duchess Favourite; *7*, Annie Elizabeth.—*A. C.* The fruit had decayed.—*C. H. C. 1*, Newton Wonder; *2*, Dumelow's Seedling (Wellington); *3*, *4* and *5*, not numbered; *6*, Blenheim Orange; *7*, Mère de Ménage; *8*, Warner's King.—*W. E. B. 1*, Flower of Herts; *2*, Royal Russet; *3*, Small's Admirable; *4*, Radford Beauty; *5*, White Nonpareil; *6*, Bess Pool.—*R. Blake. 1*, Beurré Diel; *2*, Magnate; *3*, Marie Louise; *4*, Doctor Troussau; *5*, Easter Beurré; *6*, Fondante d'Automne.—*Nemo. 1*, rotten; *2*, Bellissime d'Hiver; *3*, Adams' Pearmain.—*F. C. P. 1*, Beurré Clairgeau; *2*, Grégoire de Bordillon; *3*, Glout Morceau; *4*, Autumn Nelis; *5*, Beurré Rance; *6*, Beurré Superfin.—*W. Golding. 1*, Old Nonesuch; *2*, this is no improvement on its parent, Old Nonesuch.—*W. N. 1*, Starmer Pippin; *2*, Sell's Prolific; *3*, Bramley's Seedling; *4*, Waltham Abbey Seedling; *5*, Annie Elizabeth; *6*, Bismarck.—*J. L. Alfriston*.—*S. A. Fencote. 1*, Vicar of Wingfield; *2*, Forelle; *3*, Duchesse d'Angoulême.—*H. T. S. 1*, September Beauty; *2*, Lane's Prince Albert; *3*, Ribston Pippin; *4*, Wyken Pippin; *5*, Beauty of Hants; *6*, Adams' Pearmain.—*G. Howard. 1*, Autumn Nelis; *2*, Winter Nelis; *3*, Uvedale's St. Germain; *4*, Hollandbury; *5*, Yorkshire Beauty; *6*, Sussex Gilliflower.—*G. N. M. 1*, Over-ripe, please send again; *2*, Crimson Queen; *3*, Winter Nonesuch; *4*, Tower of Glamis; *5*, Keswick Codlin; *6*, Calville Maltingre.—*C. W. T. 1*, Ribston Pippin; *2*, Lansberger Reinette; *3*, Melon Apple; *4*, decayed; *5*, Scarlet Nonpareil; *6*, Court Pendu Plat; *7*, Welford Park Nonesuch; *8*, Autumn Bergamot.—*W. R. 1*, Hornmead's Pearmain; "Forfar" is of better quality, and is marked more prominently with russet; *2*, Golden Noble.—*S. T. 1*, Alfriston is correct; *2*, Queen Caroline; *3* and *6*, Flemish Beauty; *4*, Millot de Nancy; *5*, Aston Town.—*F. L. R. 1*, Uvedale's St. Germain; *2*, Gansel's Bergamot; *3*, Duchesse d'Angoulême; *4*, Conseiller de la Cour; *5*, Mère de Ménage; *6*, Cambusnethan Pippin; *7*, Hoary Morning.—*W. H. C. 1*, Fondante de Sicker.—*Stuart & Mein. 1*, Norfolk Storing; *2*, Fearn's Pippin; *3*, Downton Pippin; *4*, Kerry Pippin; *5*, Lass o' Gowrie; *6*, Wyken Pippin.—*F. C. F. 1*, Scarlet Golden Pippin; *2*, You are right; it is King of Tompkins County.

NAMES OF PLANTS: See note under "Names of Fruits."—*J. H. 1*, *Cephalotaxus drupacea*; *2*, *Cryptomeria japonica*; *3*, *Picea Morinda*.—*G. S. L. 1*, a form of *Thuya orientalis*; *2*,

Lonicera flexuosa var.; *3*, *Skimmia Fortunei*; *4*, *Retinospora ericoides* of gardens.—*Econ. Catasetum fimbriatum*.—*Egremont*. (No. 3 from last week), *Brassavola Perrini*.—*W. A. 1*, *Codiaeum angustifolium*; *2*, *C. irregulare*; *3*, *C. variegatum*; *4*, *C. Johannis*.—*A. H.* We cannot undertake to name varieties of *Fuchsia*. Send them to some grower.—*H. C. Acaupe multiflora*.—*W. P., Northampton*. *Cymbidium Trayanum*.—*P. W. 1*, one of the garden-raised forms of *Begonia Dregei*; *2*, *Asplenium rhizophorum*.—*H. H. Langley. 1*, *Euonymus europæus*; *2*, *Cupressus Lawsoniana erecta viridis*; *3*, *Thuopsis dolabrata*.—*A. J. W. D.* *Tsuga canadensis*, *Picea morinda*, or *Smithiana*. It must be a fine specimen. Please say where it is.—*J. Mc.* *Zygopetalum Mackayi*. The sepals and petals are broader than usual in the species.—*Blantyre*. *Dendrobium aureum*, often called *Dendrobium heterocarpum*.—*H. B., Coventry. 1*, *Maxillaria picta*; *Oncidium incurvum*.—*R. P. 1*, *Oncidium cheiroporum*; *2*, *O. Forbesii*; *3*, *Ocotea grandiflora*; *4*, *Sophranitis cernua*; *5*, *Vanda parviflora*; *6*, *Cymbidium giganteum*.

POTATO: *T. O.* We cannot undertake to name varieties of Potatoes. Send to some grower.

RED CURRANT BUSHES: *Mrs. E. M. B.* You should endeavour to obtain fruiting spurs on the old wood by judicious pruning. It would not be advisable to cut them entirely back, but remove any branches that are not likely to fruit, in order that light and air be freely admitted. Red Currants bear their fruit on the old wood, therefore it is not advisable to "lay-in" any of the suckers that may develop, but they should be cut away. Your Pear is Catillac, one of the best for stewing purposes.

SEED: *J. S. & Sons.* The arillate seed is that of a species of *Azafia*, probably *A. cuanzensis*, a widely distributed tree of tropical Africa, found also south of the tropics at Delagoa Bay. These seeds may occasionally be seen in jewellers' shops in this country mounted as trinkets. The wood is hard, heavy and close-grained, somewhat similar to Mahogany in colour and texture. An allied species (*A. bijuga*) furnishes the wood used in the Pacific Islands for war clubs, &c.

STRAWBERRY PLANTS: *Anon.* It will be more satisfactory to remove the flowers now showing upon plants of Royal Sovereign Strawberries, and delay forcing the plants until later.

VARIEGATED LEEK: *R. T. P.* A very pretty form, quite worth trying to perpetuate from the bulb. By seed the chances would be remote.

VIOLET-LEAVES: *C. Duncan.* The scorched patches on the Violet-leaves are caused by a fungus called *Ascochyta violæ*, a well-known and destructive parasite. It is a very difficult pest to eradicate, as the numerous minute spores fall from the leaves to the ground, and there quickly produce a crop which continues the disease on new leaves. Many spores lodge in the axils of the leaves, on buds, &c., and thus portions used for propagation carry the disease with them. It is almost hopeless attempting to secure healthy plants if portions of plants are used from a locality where the disease has existed. Fresh soil, and slips from plants that have never been attacked should be secured. When well established the plants, and more especially the soil, should be sprayed at intervals of a fortnight with a solution of potassium sulphide, 1 oz. to 3 gall. of water. Picking off diseased leaves is almost labour in vain, as some spores are sure to escape, and being covered with a sticky substance, adhere to any part of the plant they fall upon, and so are carried from one place to another. Fresh soil, a fresh situation, and start with cuttings free from disease, are the only means of getting rid of the enemy. *G. M.*

COMMUNICATIONS RECEIVED.—*L. Späth*, Berlin.—*L. C.*—*E. M.*, Sydney.—*J. M.*, Jno. Pope.—*S. B. B.*, Fish.—*J. H. B.*—International Gas Exhibition.—*G. Woodward*.—*G. B.*, *E. S.*, *F. P.*, *J. T. K.*, *A. C. B.*, *W. S.*, *S. W. N.*.—*H. J. E.*, *I. G. L.*, Oakland, California.—*W. T.*—*F. V. T.*, *S. W. N.*, *J. T. K.*, *A. N. A.*, *Owen Thomas*.—*G. L.*, *F. R. W.*, *G. A. G.*, *E. H.*, *T. M. D.*, *H. H.*.—*B. S.*, *W. M.*, *W. H. W.*, *T. P.*, *R. J.*, *G. H. H. W.*.—*J. C. H.*, *J. F. W.*, *H. E. G.*

(For Markets and Weather, see p. x.)



VIEW OF SOME OF THE CHRYSANTHEMUM PLANTS SHOWN AT AN EXHIBITION AT SHANGHAI ON NOVEMBER 16 LAST.

From a Photograph kindly sent us by Miss Procter, Hon. Sec. of the Shanghai Horticultural Society.

THE Gardeners' Chronicle

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THE ROSE SEASON OF 1904.

THE Rose season of the present year has been in many respects a most memorable one. The semi-tropical character of the weather that prevailed proved peculiarly suitable for the culture and perfect development of the queen of flowers. Heat and rain were alike beneficial, because of neither element was there too much. In former summers they had, indeed, an abundance of moisture, which, for lack of stimulating and energising sunlight, was cold and chilling in its effects. Even the early spring of the present year did not seem at first very favourable for the adequate growth of the Rose. Crucial memories of winter, in Scotland at least, were experienced till we reached the confines of May; and the normal rise of temperature, if I rightly remember, was not even then attained. Nevertheless the summer proved much finer than the most optimistic Rosarian could possibly have anticipated; so that even the earliest Reses, such, for example, as the Austrian Briars, produced here and elsewhere truly superb artistic floral effects. They had, of course, many beautiful contemporaries, such as the exquisite China Roses and several of the Teas and Hybrid Teas; but Rosa Harrisoni was the fairest of them all. That its loveliest companion, the Persian Yellow, should be so exceedingly short-lived in my own

garden has been to me a matter of deep regret. But there are many abiding consolations, though the uniquely-coloured Austrian Copper is not one of these. It is very effective while it lives and flowers; but in South-western Scotland it does not endure. Here it has proved almost as unreliable as those gloriously beautiful Noisettes, L'Idéal and Maréchal Niel; of which the former, grown on a west wall, produces the minimum number of flowers; while the latter, "looking to the south, and fed with honeyed rain and delicate air," has hitherto created nothing save lustrous leaves, which I do not greatly prize.

Such capricious varieties, however, have been, during a season that seems in shoot and flower to linger with us still, the striking exception and not the rule.

The Hybrid Teas have been especially remarkable for their affluence of radiant and fragrant bloom. The variety Viscountess Folkestone, which I cannot but regard as the grandest creation of the late Mr. Henry Bennet, has during the whole season been inspiring in its grandeur of foliage and glory of flower; while La France and "Caroline Testout," two of the noblest of all Roses for garden decoration, have been characteristically fine. The character which I have invariably given to Clara Watson, and Margaret Dickson, likewise to Clie and Aurora, for their reliability in flowering and the beauty of their blooms, has been sustained. The latest derivative from Mr. Wm. Paul's White Lady, entitled Corona, also an emanation from the Waltham Cross nurseries in Hertfordshire, has proved itself an important acquisition, though not in this region so large or full as the parent Rose, whose creamy-white aspect and delicate fragrance instinctively remind me of a "Malmaison" Carnation. Those of my Noisette and Tea Roses which have survived the severe visitations of recent winters and still more trying springs have flowered with very considerable luxuriance, especially the orange-hued William Allen Richardson, Madame Pierre Cochet, Belle Lyonnaise, Bouquet d'Or, Enchantress, which combines the attributes of the Tea and China Roses; Anna Olivier, which here is almost identical with Lady Roberts; Madame Lombard, in autumn invaluable; and the pendulously graceful Souvenir de S. A. Prince. I should perhaps have alluded to Papa Gontier, Madame Pernet Ducher, and Gloire Lyonnaise, as three of the most precious of the Hybrid Teas. They are of splendid growth and capability, and their floral impressiveness is supreme.

The Hybrid Perpetuals, whose name is legion, have also during the past season been in many instances extremely fine; and though "A. K. Williams" came in early summer with hardened, obdurate buds, this splendid variety has during the late autumn made amends. The varieties Horace Vernet, Charles Lefebvre, Ulster, and Ard's Pillar have been very effective; so also have Duke of Edinburgh (not yet superseded), Cheshunt Scarlet, and the richly-coloured Sir Rowland Hill, one of the darkest-coloured varieties in cultivation.

My recent experience of new Roses has taught me this, that these which achieve the highest honours at Metropolitan exhibitions are sometimes the least valuable for garden culture. There are a few conspicuous exceptions, one of which is "Florence Pemberton." Another is "Hugh Dickson," a Rose of rare beauty. David R. Williamson, Wigtonshire, N.B.

MAY IN MY FLORIDA GARDEN.

(Continued from p. 282.)

HERBACEOUS FLOWERING PLANTS.—Our half-woody, herbaceous and tuberous and bulbous water plants are all of a tropical nature. Lilies and Iris germanica have been a failure with me; Amaryllis and Crinum take their place, also Ismenes and Spider-Lilies (Hymenocallis). Ismene calathina and I. Macleana flowered very profusely. The flowers of the latter were rather greenish-white and not so fragrant as those of the former. Hamanthus Kalbreyeri was in full beauty during several weeks. This is a glorious Amaryllis when in full bloom. The Day Lilies (Hemerocallis) were in bloom during the whole month. They grow as well here as farther north. I have the common H. fulva and a hybrid between this species and H. Thunbergii, raised by Mr. J. M. Riebs, of Milwaukee. The flowers are bright lemon-yellow with orange spots on the segments, and fragrant. This is a beautiful plant and very floriferous. Morea irioides is a grand plant in my garden, large clumps pushing up their flower-spikes three or four times during the season. The blossoms are Iris-like, white, marked yellow, and very beautiful. It was introduced into Florida directly from Natal by Mr. E. N. Reasoner. Maranta arundinaria is one of my finest and most luxuriant foliage plants, growing about 5 feet high, with beautiful green Canna-like leaves, which are glaucous underneath. I was surprised to find a separate flower-scape the other day terminated by half-a-dozen pure white blooms. Cannas do not grow well near my house, but they are perfectly at home near the lake, where C. Austria has attained a height of 9 feet, and is constantly in bloom. The Verbena, Four-o'clock (Mirabilis jalapa), Petunias, Chrysanthemums (flowering sparingly through May until November, when they are in their full glory. Terenias and others are very successfully grown. Of the half-woody plants all the varieties of Lantana camara are continual bloomers, not minding drought or poor land. The new dwarf-growing hybrids are the most beautiful. Each specimen soon covers a large space, and the beautiful flower-buds, always bright and cheerful, appear in such abundance that the foliage is scarcely to be seen. Leonotis leonurus, the "Lion's Tail," is one of our most valuable herbaceous plants, its great masses of stout, erect stems, surrounded by seven to ten tiers of brilliant orange-yellow flowers, are very showy. It flowers for months together.

Scarcely less floriferous, but not so showy, is Cuphea micropetala, its yellow flowers, suffused with brownish-red on the outside, being very pretty; it grows 3 to 4 feet high. Dædalanthus nervosus (Eranthemum pulchellum), with striking blue flowers, rivalling the Gentians in the intensity of their hue, is one of the most beautiful of our plants, almost always in flower, and growing 4 to 5 feet high. The Madagascar Periwinkle (Vinca rosea) is another very important plant of our gardens, thriving everywhere around dwellings without the least care. Once established it spreads rapidly, and its pure white or rosy-red flowers add a peculiar charm to gardens and waste places. The Gaillardias are conspicuous for their profusion and duration of flowers, producing a most beautiful effect in beds and borders, but equally pretty in places where they come up from self-sown seed. These are all May bloomers. Phlox Drummondii, in all conceivable shades of red and white hues, and Coreopsis tinctoria and C. Drummondii are very common in all the gardens where they have once been cultivated. It is rather an inspiring sight, if we chance to strike an old deserted homestead in the woods, or an old, once beautiful but now neglected, Orange-grove—a scene likely to create feelings of the deepest melancholy—where these flowers form a gorgeous carpet of bright colours.

After the big "freeze" in February, 1895, there was a good deal to be seen in Florida of that melancholic and depressing stamp, but now, after the Orange-trees have recovered and the gardens are again attended to, there is much to be seen that is grand and magnificent. *H. Nehrling, Florida.*

(To be continued.)

NURSERY NOTES.

MR. H. J. JONES'S NEW ESTABLISHMENT AT KESTON.

WE were recently invited to inspect the new establishment at Keston, Kent, of that well-known Chrysanthemum grower, Mr. H. J. Jones, of Lewisham. Ryecroft Nurseries and the name of Jones are inseparable terms, and it is in these nurseries that this grower's success has up to the present been obtained; but the ever-increasing populated area, linking up and absorbing suburbs which but a few years ago were quite distinct from the great centres of population, has brought in its train conditions which are absolutely fatal to successful plant cultivation. Mr. Jones, with the forethought that has contributed not a little to his success as a nurseryman, has not been slow to realise these changes, and to act accordingly. Determined to maintain his high reputation as a successful cultivator, and to meet the requirements of his business, he has secured a new nursery site at the village of Keston, in one of the most favoured spots in the county of Kent, situated not far from the town of Hayes and its famous common. The spot, known as "Leafy Grove," is an ideal one on which to found a plant-growing establishment.

Facing south upon the side of a warm slope, and protected on the north side by a screen of trees and undergrowth, the site gives evidence of having been selected with great forethought. About eight acres of ground are at present included in the nursery, consisting of a rich gravelly, and in places of a marly loam. A large breadth of this land was occupied by numerous varieties of Potatoes, which Mr. Jones has taken to growing in earnest, with what success may be evinced from his Gold Medal collection at the recent National Potato Society's show at the Crystal Palace. The tubers were being harvested on the occasion of our visit, and we were shown excellent recently lifted tubers of the varieties Warrior and Evergood.

Dahlias occupied another large portion of the ground; while perennial Asters made a big show. Mr. Jones makes a feature of these herbaceous plants, and his collection is very complete. Roses are extensively planted and should do well at Keston. Sweet Peas have only lately finished flowering at "Leafy Grove." These again are grown on a large scale by Mr. Jones. Violas, Cannas, and many herbaceous plants were noticed, but of course the main feature just at present were the Chrysanthemums. These are contained in three new glass-houses. The more recently built of the three is a fine building, 140 feet in length by 30 feet in breadth, and having an elevation to the centre of the roof of 16 feet. This excellent glass structure was occupied by no fewer than 1000 plants of Chrysanthemums, and the sight can be more easily imagined than described. Most of the newer and better varieties of recent years are grown, as well as those of older but proved varieties. In addition to these are the good things intended for this season and many promising seedlings which will no doubt be in evidence next year. We may enumerate a few of the varieties that appealed to us as being especially meritorious, and of these Mildred Ware was developed with all its characteristic beauty. A charming sport from this kind is Mrs. J. Haddaway, of large size and excellent form, and shaded an exquisite cinnamon or straw colour.

Quantities of Mrs. J. Dunn were noticed, and on all the numerous plants the flowers were of a high standard of excellence; it is evidently an acquisition among "whites." Mrs. Street, of a rich yellow colour, with petals gracefully curved at the ends, was striking; also that handsome incurved Japanese, Beauty of Leigh, quite one of the best yellow varieties of the type. Maud du Cros, a large flower of soft sulphur-yellow, with interlacing petals; and A. L. Stevens, rich bright yellow, are other new varieties of this colour.

Lady Mary Conyers resembles the variety Mrs. Mileham, but it is deeper in colour than this variety, and has larger and stiffer florets. Hon. Mrs. A. Acland is a very refined flower, of a handsome shade of yellow, the petals being pleasingly reflexed at the apex. Mrs. W. Duckham is another of this type, with recurved ends to the petals, and in this variety the colour is also yellow; an excellent flower. Mrs. Wheeler

flower, but of exquisite shade of yellow; Lady Leonard, rose incurved with amber reverse; Mme. J. Perraud, handsome creamy white with wavy petals, and Mr. R. C. Pulling are other good flowers worthy of mention.

Among the hairy section we noticed Mme. Paolo Radaelli with white petals suffused with rose and having a suspicion of yellow tints. An interesting fimbriated sport of Mme. Carnot shows great promise, and will no doubt be in evidence in the future.

SHIRLEY PARK.

OUR illustrations at figs. 147 and 148 represent views in one of the largest estates near the Metropolis that has not yet been cut up and utilised for the building of villa residences. Shirley Park is an estate of 100 acres, situate 1½ mile from Croydon, and about 10 miles from London. It is at present the residence of Colonel Simpson, whose lease from the Earl of Eldon has just expired.



FIG. 147.—SHIRLEY PARK HOUSE, NEAR CROYDON.

(From a photograph by John Gregory.)

Bennett, quite new, has flowers with plenty of substance; petals of a rich amber colour. Madame Paul Sahut, an incurved Japanese with flower of commendable shape, has pleasing petals suffused with rose colour.

Of the incurving twisted type of petals is Mrs. Hambleton, the buff ground being suffused with rose, the margins assuming a picotee character. Mrs. W. Elliott is a desirable addition to the creamy-white section, among which Miss Elsie Fulton and Miss Alice Byron were worthily holding their own. Guy Paget is another excellent white recurved flower. Mrs. Bischoffsheim, a sport from Miss Lily Mountford, is a very bright addition to the coloured section, the yellow ground-work being suffused with crimson and lake. Mrs. Greenfield, deep canary-yellow coloured Japanese; Sensation, large bloom of rich orange colour; Donald McLeod, of dwarf habit, flowers rich yellow; Souvenir de Madame Buron, a light yellow sport from Miss Elsie Fulton with all the desirable qualities of its progenitor; E. H. Parker, a fine crimson, one of the best of this colour; Mrs. E. Crosley; Miss Cicely, large somewhat flattened

The antiquity of the place is particularly evident in the gardens. The quaint Rose-garden with the old boundary wall, against which a seat is protected by a roof of thatch attached to the wall, is particularly attractive, being characteristic of an old English garden. The beds in this garden have tall Box-edgings, and every feature within the view is one suggestive of age. The wall, like others that have commenced to crumble away, affords a home for several flowering plants, such as Alyssum, Antirrhinum, and a Conifer, seeds of which have germinated in the old mortar.

The pleasure-grounds are extensive, and include the lake shown in fig. 148; but very little planting has been done for a number of years past, and most of the trees and shrubs are of indigenous species. The lake is situated in a slight hollow, and could be made an exceedingly pretty feature, but at present its banks are furnished almost entirely with the common Alder. At the extremity of the well-kept pleasure-grounds there are woods that extend to the foot of the Shirley Hills, a distance of more than a mile. These woods have paths

through them, and they afford delightful walks, during which the scenery changes very frequently, there being considerable variations in the altitude. If all that is possible to add to the beauty of the woods were carried out we can imagine nothing more charming than they might be made. The present gardener, Mr. W. A. Cook, has planted a large quantity of bulbs near to the paths, and in other ways has done much to improve the wood, but it is obvious that extensive planting could only be done by the owner, or by an occupier who possessed a long lease of the estate. At present, as one walks through these woods, the shrill notes of the jays are heard; and it is unlikely that this bird still inhabits many places so near to Charing Cross as is Shirley Park.

exceedingly fruitful season at Shirley, and Apples and Pears of good quality and great variety have been plentiful. There is a large grass-covered orchard near to the village of Shirley in addition to the garden fruit-trees, and in this orchard there are very large trees of Blenheim Orange and other varieties of Apples that have yielded an immense amount of fruit.

The glasshouses are relics of a past age, and Mr. Cook has doubtless to resort to every means possible to obtain the satisfactory crops of Grapes, Melons, and other fruits, also of forced vegetables, that he does. The pieces of glass in the roofs of the houses, other than the range in which the decorative plants are cultivated, are not more than 3 inches long, and the methods of

above notes were written, there has been a general sale at Shirley, preparatory to Colonel Simpson's quitting the residence. *Ed.*]

HOW TO MAKE A "LOCK-UP" TOOL SHED.

THERE are many who take an interest in gardening, but who lack the accommodation necessary for the proper keeping of the various tools and implements employed. This refers chiefly to amateur gardeners, so that it is felt that a few practical instructions on how to build a suitable shed may be of interest. It is not necessary to be skilled in carpentering, and gene-



FIG. 148.—VIEW OF THE LAKE AT SHIRLEY PARK.
(From a photograph by John Gregory.)

The kitchen gardens are old, of course, but the soil still appears to be sufficiently fertile, for on September 26, when our visit was made, Mr. Cook showed us first-class crops of vegetables in every corner. The kitchen gardens are surrounded by walls, and consequently there is an unusually large space upon walls for the cultivation of fruit-trees. Peaches and Nectarines succeed well in these out-of-door situations, and the trees have yielded as many as 2,000 good fruits this season. It would be difficult to determine the age of some of the old espalier and bush Apple and Pear trees; but, whilst some of these veterans are still fruitful, there can be little doubt that the productiveness of the garden would be increased if some of the older trees were sacrificed in order that young trees might be planted. The present year has been an

affording ventilation are most primitive, yet excellent crops of Tomatos and Cucumbers are grown. There is an excellent batch of Eucharis and also of other species useful for decorative purposes or for affording flowers for cutting, it having been necessary to supply a considerable number of plants and cut flowers for decorating the dwelling-rooms.

It will be seen from fig. 147 that the house is built of stone, which is whitened. Colonel Simpson has built a fine billiard room and electrical engine rooms, &c., during his occupation of the place, and has installed the electric light everywhere. We wonder what the near future will witness at Shirley? Will this fine old place be maintained after alterations have been made, or will it share the fate of so many establishments of a similar character that we can call to mind? [Since the

rally gardeners are "handy men," and can at least use the most elementary of carpenter's tools, such as the saw, the plane, and the chisel, so that this article is intended to help those who are not skilled mechanics. Further, there are many who would like such a shed, but a difficulty comes in the fact that once built it has generally to remain a fixture, but on other people's property one does not usually feel generously disposed. The illustration (fig. 149, p. 332) depicts a useful shed that is built up in sections, so that it can be readily taken to pieces at any time and re-erected elsewhere, thus making it a "tenant's fixture."

The cost of production, which can be calculated at about one-third the cost of one built professionally, the amount of material and a fair average cost being given below. The quantities are suffi-

cient for a shed 8 feet long by 6 feet wide and 8 feet high in the centre. Any amateur wanting a larger size can easily increase the measurements in proportion; but for a portable shed the measurements should not greatly exceed those given in the instructions to follow:—

QUANTITIES AND COST.

	£	s.	d.
150 feet of 2 by 2-inch quartering, at 5s. 6d....	0	8	3
80 feet of 2 by 1-inch quartering, at 3s....	0	2	5
364 feet of 7-inch feather-edged weather-board, at 5s. 6d., say	1	0	0
150 feet of $\frac{3}{4}$ -inch by 6-inch matchboard for roof, at 4s. 6d.	0	6	9
24 feet of 1-inch ditto for door, say	0	2	0
Felt for roof, 12 yards at 4d.	0	4	0
1 dozen bolts and nuts $3\frac{1}{2}$ by $\frac{3}{4}$ -inch	0	1	6
Window glass	0	1	0
Nails, lock, and hinges, say	0	3	0
	2	8	11

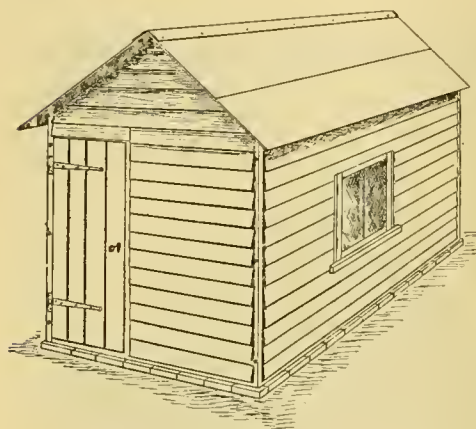


FIG. 149.—LOCK-UP TOOL-SHED.

which means roughly 50s., so that the amateur will know what the outlay will be; and anyone who takes a pride in the garden tools will, I think, consider this a good investment.

Coming now to the construction, it is purposely made simple for the uninitiated. No doubt with regard to the joints the more advanced carpenter will substitute mortice and tenon joints in place of the "halving" joint, which is clearly shown in

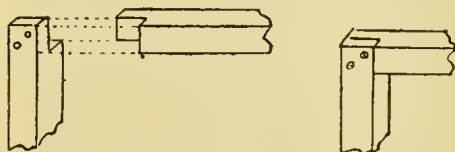


FIG. 150.—HALVING JOINT.

Fig. 150. It is a joint not usually advocated for stability, but in the present case is effectual and strong enough, besides being the simplest of joints, because the four sides of the shed being built up in four sections, the weather-boarding is nailed to the frame-work and at right angles to the uprights, which will give sufficient rigidity to it, the sides being finally bolted together.

Fig. 151 shows the frame-work for the front, which is made entirely with 2-inch-square quartering; the two end uprights A A are 6 feet 6 inches long; the doorway 6 feet high and 2 feet wide. The upright B, which forms part of the door-frame, is 7 feet 9 inches high, whilst the next one, C, is slightly shorter, being fixed midway between B and A. The pieces E E form the gable, and each measures 3 feet 6 inches long, and the point at which they meet (the ridge) is 8 feet from the ground. F is the lintel or top part of the door-frame, and its position has been defined, whilst D is the bottom piece, part of it forming the sill of the doorway.

The way to go to work is to cut off the various lengths and lay them in their proper places on the ground, putting E E and D below and lay

the other pieces on them; then it is easy to mark with a pencil where to halve them in. This done, the feather-edged weather-board is put on starting from the bottom; it overlaps D 1 inch and also the uprights; and it is important to leave 1 inch of the uprights uncovered, but when the gable is

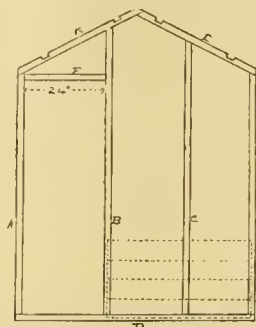


FIG. 151.—FRAMEWORK OF FRONT.

reached then the boards should be cut flush with the edges of E E.

The weather-board is 7 inches wide. This allows for a 1-inch overlap, which means that the thick edge of each board overlaps the thin edge of the board immediately below it. The best nails with which to fix the boards are oval wire nails or brads (2 inch), or else clasp nails: the ordinary flat-head wire nails are not so good as the heads cannot well be punched in.

It will be noticed that on account of the gable roof the tops of the uprights are cut on a bevel,

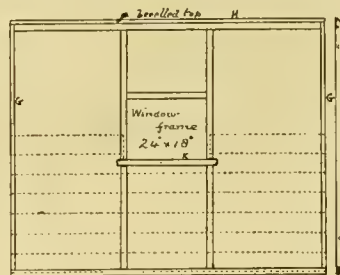


FIG. 152.—FRAMEWORK OF SIDE.

the same angle as the gable so that the halved joints fitting into the gable, E E are all cut on the same angle: and note that all joints are secured with screws (2 to each).

The back of the shed is made as fig. 151, except, of course, the doorway is not required, so the uprights B and C can be placed at equal distances between the uprights A, A. There is still a 1-inch margin to be left on the uprights when fixing the weather-boarding.

Fig. 152 shows the side of the shed containing the window-frame, also a section of frame to more clearly show the bevelled top. This framework measures 8 feet long and 6 feet 6 inches high to top of bevel, and is of 2-inch-square wood, except the outer uprights G, G, which are of 2 by

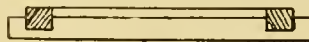


FIG. 153.—PLAN OF WINDOW-SILL.

1 inch, as they belt against the uprights A, A. The intermediate uprights and their connecting pieces together form the window-frame, the size of which can be increased to suit individual requirements. The dotted lines show how the weather-boarding is fixed, coming flush with the outer edges of the uprights. The connecting piece, K, which forms the window sill, is 31 inches long and 3 inches wide. This width can be obtained by nailing or screwing a piece of the 2 by 1 on to a piece of 2 inches square, the former to be just long enough to fit between the uprights and form the back of the sill. Fig. 153 shows a plan of it.

The corresponding side of the shed is built up as fig. 152, but without the window frame. The roof is made in two parts with match-boarding, the grain of which running from ridge to eaves. Each part has two stretchers of 2 by 1 inch, to which the boards are nailed, the stretchers coming underneath to fit into the notches, cut out as shown in E E, fig. 151, and should overlap the shed 4 inches each end. The matchboarding is then covered with felt, taking two widths of felt to each part.

The shed so far made can now be put together; but first it is necessary to have some sort of foundation. The ground it is to cover must be levelled and made firm, and then stand the four sides on a course of loose bricks placed end to end, as shown in fig. 149; they make an excellent

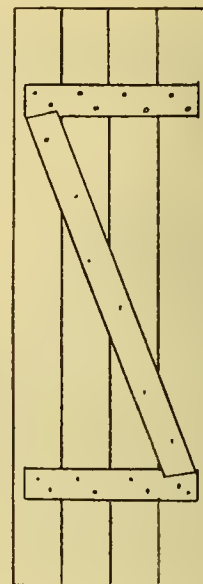


FIG. 154.—DOOR OF SHED.

foundation, and prevent the wood from rotting. The ends of the shed are belted on to the sides, three bolts to each corner, $3\frac{1}{2}$ by $\frac{3}{4}$ inch; and put on an iron washer before screwing on the nut. Next lay on the roof, screwing it to the gable-tops, E, E.

To cover the ridge where the two parts of the roof meet, a strip of sheet zinc 10 inches wide is

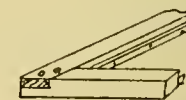


FIG. 155.—PART OF SASH.

nailed on from end to end, which will make the roof perfectly water-tight. Fig. 154 shows the inside of the door, which is made up with the 6 by 1 inch matchboard, after trimming off the outside tongue and groove. The two cross battens and the brace between them are about 4 inches wide and $\frac{3}{4}$ inch thick; nail them on from the front and clench the nails on the inside. The hinges are a pair of 12-inch cross-garnets screwed on the face of the door, as shown in fig. 149. On the right-hand upright of the door-frame a strip of wood is wanted for the door to shut against, and for a lock, a 5-inch "dead" lock is about the most simple, and is fixed on the inside. For the door as shown, a "right-hand" lock is wanted.

The window should be made to open by hinging it at the side, the frame being cut out of 2 by 1 inch wood, "halving" the uprights into the top and bottom rail (fig. 155); on the inside of the frame fix on a strip of wood $\frac{1}{2}$ inch thick and $\frac{3}{4}$ -inch wide to form a rebate or shoulder for the glass, which should be in one piece. The window

shown has a centre sash-bar; this can only be done by the more advanced amateur, who will then mortise his frame together, and cut the rebate for the glass with a rabbet-plane, and make the sash-bar with this plane also.

When nailing on the weather-boarding, it is important to keep the ends in a perfectly straight line, leaving a 1-inch margin on the front and back uprights, so that when all is finished the ends on the front, back, and two sides are "stopped" with strips of wood the thickness of the boarding, which will prevent the weather getting in at the ends. Finally the shed should be treated with "Stockholm-tar," which leaves a good brown colour; paint the door a dark green, and the window-frame white.

Nothing definite can be said with regard to the interior fittings. A tool-shed does not require a floor, although it is easy enough to add a portable one if necessary. A shed of this character is very handy for "potting-up," in which case one would require some sort of bench, but as the object of this article is only to show how to build the shed itself, the various uses it can be put to must be left to individual requirements. S. W. N.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE CENSUS OF APPLES.—I should like to say a word or two upon the subject of your census of Apples, which I regard as very valuable to the fruit-growing public. "Lane's Prince Albert" thirty-six years ago was given to my father by the late Thomas Perkins, of Northampton (some half a dozen maiden trees under the name of "Perkins' Seedling"). From that time to this they have never been without fruit, and we find it the best culinary-Apple for towns or smoky districts. I can quite understand "A. D." in the *Gardeners' Chronicle* saying that highly-coloured Apples generally are not of the best flavour. The sweetest Apple I know, either English or foreign, is quite pale green (assuming green to be no colour in Apples); the name of the Apple is "Iloney." I think the Fruit Committee should be more careful in awarding certificates to Apples, as one is apt to buy on its recommendation. Allington Pippin and James Grieve have both fruited well this year, but neither is equal to Cox's Orange Pippin, nor even equal to the very old Wyken Pippin. No Apple should be certificated unless it has some quality which makes it superior to existing kinds. I am at present doubtful about "Charles Ross." Many new Russian Apples fruit well, but not one is equal to our old sorts. Kenneth Early is a good early Codlin, maturing before "Lord Suffield," and seems to have a better constitution than that variety. John Pope, *The Ericas, King's Norton*.

— Although Lane's Prince Albert is placed at the head of the list of cooking Apples in your issue for October 29, it is by no means clear what its votaries regard as its merit in cooking. For my own part, I should certainly not place it in the forefront of good cooking Apples, though I know it is a good cropper and a free-growing variety. What I regard as a first-rate cooking Apple should embrace the following good points:—The fruit should possess a small core, and the flesh should be quickly reducible to pulp, and be of good flavour and inviting in colour. All of these qualities may be found in Bismarck, which is not only good now, but will remain good long after Lane's Prince Albert is useless. Lane's Prince Albert is of a dirty-brown shade when cooked. The core is comparatively large, and the flavour by no means of the best. As a variety for present use Stirling Castle, which obtains 52 votes, has good flavour, white pulp, and a small core. The tree is generally a good cropper. E. H. Jenkins, *Hampton Hill*.

NATIONAL POTATO SOCIETY AND COOKED POTATOS.—No, Mr. Wright, I do not mean to "infer that this Society should cook half its exhibits." But I do suggest that the Society

would be of more practical value if it required (with, of course, certain reservations) a portion of each exhibit to be boiled. I presume the governing body has already discussed this point, or its secretary would not make such a positive assertion on the subject and decide against it. Their attitude is to be regretted, for I am of the opinion, and apparently I am far from being alone, that in the near future flavour and appearance when cooked will be of much greater importance than mere symmetry of tuber and prodigious yield. I am sorry for the "experts" who by October 11 could not form a reliable opinion of the merits of any Potato. A. C. Bartlett.

— I am obliged to Mr. Walter P. Wright for stating his opinion in so uncompromising a manner. "Judging by flavour," he writes, "sounds right in theory, but it may be all wrong in practice" (p. 322). And he supports this amazing doctrine by the assertion that many of our best Potatoes do not develop their flavour until the winter, i.e., until after the date of an autumnal show. If this be so, then in the name of common sense let the principal show be held in mid-winter. The Potato is *par excellence* the winter vegetable, and its long-keeping varieties are the most important and beyond others demand the culinary test. There is already a full programme of fruit and Chrysanthemum shows in the autumn, and a great Potato show might be a welcome incident in the dead of winter. But whether this is feasible or not, Mr. Wright's principle of judging is preposterous, for it means that he is content to judge the most valuable Potatoes not by mouth but by eye. What would he think of a high award being given to a remarkably large and handsome Melon, which could not be cut or tasted because only half ripe? Or does he claim that the judges know by the look of a Potato on the show-table how it will taste some months afterwards? The truth is that if Mr. Wright put his case still more frankly, he would own that flavour is an altogether minor consideration with the officials of the National Potato Society, and, I fear, with the modern Potato raiser. No one can deny this who studies seed catalogues and exhibition reports. Stories increase every week of monstrous crops of gigantic tubers, but never a word as to whether they are good, bad, or indifferent to eat. Someone writing the other day of Northern Star admitted that "his idol was shattered," by which he probably meant that his idol had been boiled and found wanting. Every society must have its standard; perhaps Mr. Wright will tell us what is his ideal Potato? If I may venture a sketch, I should fix upon the Ashleaf as a criterion of flavour, and of smooth, shallow-eyed form. At its largest it is also adequate in size, for there is no gain whatever in having to cut a tuber into two or three for cooking. It should be heavy cropping and disease-resisting, neither of which requisites are necessarily beyond the reach of the hybridist. Even as it is, we are apt to forget that small-topped, moderate cropping varieties can be planted much more closely than those with enormous haulm. And it is questionable whether stress enough has been laid on the value of Potatoes which ripen before the incidence of the disease. I have for very many years grown for a main supply an Ashleaf-like Potato named "Belle de Juillet," obtained from MM. Vilmorin-Andrieux et Cie., which goes far to fulfil these conditions, and to indicate what might be done by raisers along similar lines. It invariably matures before any disease appears, is delicious when freshly dug, and keeps extraordinarily well. One winter a considerable quantity was overlooked by an accident until spring, and was then found excellent in flavour and texture. But at present I fear an all-the-year-round Ashleaf would have little chance on the exhibition-table by the side of the 2 lb. cow-tubers. The stupid prejudice against yellow flesh—Nature's advertisement of sweetness and flavour in fruit and vegetables—would cause it to be disqualified. As to resistance to disease, there is much reason to doubt whether these huge, prolific, and extravagantly priced varieties will be immune after the first few seasons of vigour given by youth and change of soil. I have not seen it in print that the National Potato Society has instituted any very careful enquiry

into the matter. Mr. G. Taylor (p. 322) tells us that the Crystal Palace judges resented a "horticultural standard." "What they want is weight," Mr. W. P. Wright says, "Judging by flavour... may be all wrong in practice." Or, put briefly, "Quantity first, quality immaterial." If such are truly the views of the National Potato Society it is merely another agency for the misleading and vulgarising of the national taste. G. H. Engleheart.

POTATOS TO EAT.—New Potatoes are not of the quality of Ashleaf, and to my taste yellow-fleshed Potatoes are of the best flavour; but I do not agree with the Rev. G. H. Engleheart that raisers should devote themselves exclusively to obtaining quality. The tuber is the workman's vegetable, and people having business in large towns cannot fail to notice the immense quantity consumed by them, and the eagerness with which they find out the cheapest market. In Birmingham to-day I saw Potatoes marked 3 lb. for 1d. What a boon this is, when so many of the workmen are upon short time! hence the necessity for a tuber that will produce the greatest number of tons per acre. With the advent of Magnum Bonum (the forerunner of the big-cropping sorts) commenced the decline of the importation of Potatoes, for with these great croppers we are able to grow our own Potatoes, and in some years thousands of tons for export. It is remarkable that while those good old sorts, Red Regents, Fluke, Paterson's Victoria, &c., have all worn out, Ashleaf, older than either, is still one of the favourite early Potatoes, and among the best for the table. John Pope, *The Ericas, Kings Norton*.

THE BRITISH GARDENERS' ASSOCIATION.—About a year ago I suggested in your columns the formation of an association of head-gardeners of the United Kingdom, in order to correct some of the evils from which the profession suffers. The proposal was considered by a committee of private gardeners, but as it failed to find the necessary support at a subsequent meeting it was dropped, and a resolution was passed in favour of forming an association on much broader lines, to include all professional gardeners, both of public and private gardening. This has been carried into effect, and arrangements have been made to hold meetings during the winter in several of the large provincial towns in order to bring the subject before the notice of gardeners in those districts. I would, however, like to appeal to all head-gardeners and under gardeners, and all Gardeners' Debating Societies, to give the subject their thoughtful consideration during the winter, and to join the Association. The regulations have already appeared in the *Gardeners' Chronicle*, and Mr. Watson, Kew Road, Kew, who is honorary secretary, will forward particulars if requested. It is the first time any society has attempted to join the profession in a common bond. I think all who know or understand anything about the majority of gardeners will admit that the profession is worthy of a good organisation, instead of the miserable chaos which now exists and which slowly but surely grows worse. The Association has no antagonistic feeling towards any other societies, on the contrary, if well supported by the profession, it will lead to their development, and foster mutual help and friendship among its members, resulting in mutual instruction. It will be largely in the employer's interest also, because it will afford some guarantee to him that he is getting a gardener who has had more or less training in his work. Many employers complain now, and with good reason, that they cannot get a good gardener; it is often because they do not know where to find him. I look forward especially to the Association obtaining a better training for young gardeners, who will one day have to take leading positions in the profession. Many of them at present have very little opportunity for studying the outdoor aspect of gardening, which, after all, is the chief part. Some mistakes have no doubt been made at the institution of the Association—this was bound to be the case in such a new departure—but they can be set right according to the wishes of the members as soon as the Association gets into full working form. W. H. Divers, *gr. to the Duke of Rutland*.

NERINE FLEXUOSA ALBA.—I purchased a good-sized bulb of this beautiful, pure white-flowered Nerine from the Hale Farm Nursery Company in 1899, and was told that I might expect it to bloom that autumn. It failed to do so, much to my disappointment, and during each of the four intervening seasons it has also continued to disappoint me by producing nothing but abundant and luxuriant foliage and a quartet of offsets round the parent bulb. This year however it is, I am happy to say, amply making up for lost time, as the central bulb is sending up the quite abnormal number of four flower-spikes, and all the offsets one each, thus giving a fine set of eight flower-spikes in an ordinary 6-inch pot. They are all now in full flower and are very beautiful. *W. E. Gumbleton.*

COLOUR IN APPLES.—Being greatly interested in the colouration of Apples, and having assigned the probable determining factors in relation to the cause of it in my previous contributions to your columns, especially in the past summer, I was attracted by "A. D.'s" remarks on p. 276. I am not aware that in any previous year has fruit been so highly coloured. The influence exercised by timely rains about four or six weeks before the great fruit show in the new Hall has evidently been the cause of the astonishing glow of the colouring. As to flavour in the higher-coloured fruits, I have no evidence, among the many varieties in my garden, of any deficiency of flavour where colour is usually pronounced. Cox's Orange is among those of pronounced colouring this year; its flavour, as well as that of Ribston in its best coloured specimen, is indeed superb. The rich vinous attributes and high saccharine of the latter render this season famous. Even a variety of much less repute, Colonel Vaughan, was never handsomer in form and tint, and its flavour is excellent. Worcester Pearmain, on the other hand, showed as usual. I think that as we have vintage wines from superior crops of Grapes highly matured, so we have vintage ciders, or ought to have, if our cider-makers were equal to their task, or had at any time risen beyond mediocrity in their performances, not to speak of the high prices which render really decent cider as luxurious a beverage as fair hock or claret. Such properties as appertain to vintage beverages must obviously be attributable to Apples and other fruit in corresponding seasons. I should like to emphasise my very favourable impression of the Lady Sudeley Apple, which I have grown from the year it was put in commerce some twenty years ago. The colour this year was remarkable, and eclipsed that of all other varieties of many sorts by its glorious sunset tints. Its flavour is excellent, and in its season, from the end of July with me this year, is hard to beat, the well-known Irish Peach being a pleasant contrast. King of the Pippins has no place in my collection. [It is at best only second-rate. Ed.] When it is claimed that Lady Sudeley is the most important September Apple for dessert, I cannot agree. A far superior variety is Gravenstein for that month to eat from the tree, or very soon afterwards. A volume of testimony in relation to this exquisite variety was furnished by its appearance among Messrs. Cannell's splendid exhibit at the recent fruit show. I have never seen such glowing tints of that variety in Europe, as usually yellow prevails with mere crimson streaks. But it is its wonderful bouquet and aroma, coupled with its saccharine and withal its sprightly juiciness, a combination of virtues which render it a variety which in its season is unsurpassable. Had Messrs. Cannell placed their Gravenstein exhibit before the Fruit Committee for certificate, a First-class Certificate could scarcely have been withheld. Even an Apple like September Beauty, although at its best several months after, has had the First-class Certificate bestowed years ago, and yet it is a very poor bearer indeed and small, in both of which points Gravenstein far exceeds it. I could not discover a single exhibit of September Beauty in the late great fruit show. No boy would any longer care for the "Boys' Apples" such as Duchess of Gloucester, Duchess of Oldenburg, Beauty of Bath, King of the Pippins, and others, when once he had become acquainted with the Gravenstein. The part which Cox's

Orange Pippin plays in October and November might be performed by the Gravenstein a month or six weeks earlier. It should grow well in Yorkshire even, as that is in the same latitude as that in which a couple of generations ago the variety originated in North Germany, and where it produces better fruit than in South Germany. Messrs. Cannell's exhibit of the Gravenstein merited all the praise annually reaped by Messrs. Rivers for their unexcelled exhibits of dishes of Cox's Orange and Ribston Pippins, and which were again conspicuous this year. But then this high colour is the result of treatment under glass, whereas Messrs. Cannell's Gravenstein are grown in the open. I should like to endorse the view expressed by "A. D." concerning exhibits of high-flavoured dessert fruits at future shows. Another thought in this connection is that a special exhibit of the best-known varieties of Apples and Pears should be ranged in classes representing the countries of origin of each variety, so that we might have an easy access to the appreciation of honours that each country might claim. We should have British, French, Belgian, German, Russian, American, and others—a disposition that would be instructive and interesting. The Council of the Royal Horticultural Society might invite our leading firms to contribute their share of varieties, so that nothing of merit should be excluded from the plan. Even continental growers might be invited to compete. If we had not allowed the new Hall to be built without a most necessary, even wide, gallery all round, that from the design of the roof could not have intercepted any light from the exhibits below, it would have saved us many regrets that must become more and more pronounced as time will show the limitations of the superficial area. The gallery would have been a useful place where to show to advantage the geographical distribution of the origin of high-class fruit. *H. H. R., Sidcup, Kent, Oct. 22, 1904.*

FRUIT GROWING.—It was not my intention to again trouble your readers in this amusing controversial correspondence, but as Mr. Crump has again shown plucky fight, and the Editor has not yet said, "This controversy must now end," I venture to say a little more in reply to Mr. Crump's last communication. Mr. Crump takes comfort that I admit "there probably may in fruit trees be an asset of some value for the benefit of the estate." Of this sentence Mr. Crump makes literary capital, of which I do not grudge him in the least. If this climbing down, as Mr. Crump puts it, gives him any comfort I am quite pleased, and only wish it could be substantiated by facts. I am also infinitesimally interested in fruit-tree cultivation, and sincerely wish for the benefit of all that it could be placed on a better remunerative marketable basis. Readers, as Mr. Crump says, will have read between his lines, and also between my lines, and will have realised long ago on which side the substance lies. To show that I am not at all prejudiced in the matter either way, I am perfectly willing to believe that the majority of readers may be prepared to believe in the *ipse dixit* as set forth by Mr. Crump, whilst probably only a small minority may be prepared to believe in mine. Mr. Crump refers us to p. 226 for stubborn facts to which he has repeatedly pointed in substantiating his opinions. Thinking I might unwittingly have overlooked those facts, and done Mr. Crump an injustice, I have referred to p. 226, and find that it is only the old familiar figures to which he again draws attention, viz., the £50,000 and the £100,000. But these kind of facts are not good enough, they are illusory and misleading. We want substantiated facts, and I should be pleased to make a journey into the adjoining county of Worcester to see the arcadia of 10,000 Apple-trees representative of a capital equal to either of the above, I had almost said, fabulous figures, or even of a respectable dividend resulting therefrom. But as great Apple-crops such as we have had this year only occur occasionally in this country, say once in four or five years or thereabouts a profit of 5 per cent. would be a miserable return; a 25 or 30 per cent. would be more fitting and none too much. But all these, much to our chagrin, and other imaginary profits are completely falsi-

fied by the miserable accounts of sundry sales and prices given in local papers from time to time lately, and all this not only in Worcestershire, but in many other counties throughout England. In conclusion, allow me to thank Mr. Crump for his timely hint, that when I come to sell this small estate, which has a river at its garden end, &c., I should not forget to have the fruit trees valued. In doing this I do not think I could do better than employ Mr. Crump as valuer. The Worcester man's valuation I fear would not be realisable. *W. Miller, Berkswell, October 17.* [This correspondence must now cease. Ed.]

FRUIT PICTURES.—In the shop windows of an enterprising firm of fruit-merchants in Glasgow there are exhibited a few Apples of magnificent proportions and glowing colour, bearing on the skin of the fruit an elegant portrait of His Majesty King Edward, evidently produced by scientific treatment of the natural colour of a ripe fruit, and the statement that the firm paid £1 each for those extraordinary and beautiful specimens may be accepted without reserve. The admiring crowd at the window ask, How is it done?—and the answer involves botanical reflection. The fruit is at first green, like fresh leaves, from the presence of a colouring substance termed leaf-green or chlorophyll which coats minute granules of the living protoplasm in the cells of the fruit skin. With maturity the leaf-green assumes the golden hue of autumn, and where fully exposed to sunlight ripens to the familiar red cheek of the Apple. Those changes of hue depend on sunlight, and may be controlled with elegant effect. The old method was to cut out a device in tinfoil and affix it to the surface of the fruit, the exposed part developing the natural colour, and the covered portion becoming pale from the absence of light, and if bearing a name and birthday congratulations was an elegant gift within easy attainment in a garden; but the latter development of the art has evidently taken the aid of the photographic film with its delicate shades and consequent richer effect. Another experiment with leaf-green is to soak a few leaves in strong alcohol, such as methylated spirit; this dissolves out the leaf-green, making a solution of a bright green by light transmitted through, and a rich brown in light reflected from its surface, when the solution is placed against an opaque body. A further interesting effect from the chlorophyll granules is their movement towards the outward end of the cell in faint light and downwards towards the sides of the cell in strong light, causing plants, especially Ferns, to show a finer green when examined by lamp-light as we go round the houses at night to see that the temperature is right, and leading to deep cogitation that has secondary but valuable uses. *G. Marshall Woodrow.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Cattleyas.—Of all the Orchids which bloom at this season of the year, the beautiful varieties of *Cattleya labiata* are special favourites. Their richly-coloured flowers have a brilliant and pleasing effect, especially by artificial light, consequently they are always in great demand for decorative purposes. During the time the plants are in flower it is advisable to keep them somewhat dry; and care must be taken that no water falls upon the flowers, or they will quickly become spotted and useless. When the plants have finished flowering, it is important to remove the old flower-spikes and the succulent flower-sheaths as near as possible to the top of the pseudo-bulbs, as moisture often accumulates in the base of the sheath and in the old flower-spikes, causing the leaves to become diseased and the new pseudo-bulbs to decay. Plants that have been affected in this way should have the decaying parts removed at once, while a coating of slaked lime placed over the cut will often prevent the disease from spreading to the base of the pseudo-bulb. After the plants have finished flowering, and during the winter

months, keep them in the coolest and best-ventilated part of the Cattleya-house. The plants being in a dormant condition, they should be sparingly watered at long intervals, only sufficient moisture being needed to keep the pseudo-bulbs fresh and plump, while every endeavour should be made to induce the production of new roots and prevent premature growth. The proper time to repot these Cattleyas is immediately new roots are observed pushing from the base of the current season's growth. Any plants that are already well furnished with roots, and where the compost is in good condition, will require to be given larger pots according to the size and strength of the plants. If a plant has become enfeebled through growing in a sour compost, it will be advisable to wash every root previous to repotting the plant. Remove all useless back pseudo-bulbs—if three are left behind the leading growth, they will be sufficient; and the plants may be given smaller pots than those they have previously occupied. The severed-back pseudo-bulbs of special varieties may be induced to break again if planted in shallow pans filled with sphagnum-moss, and placed in a slightly warmer atmosphere. Our plants of this species have made considerable improvement during the past two seasons, especially since using the following potting compost—equal parts of fibrous peat, leaf-soil, and sphagnum-moss, cutting the peat and moss up roughly with a pair of shears, adding a moderate quantity of coarse silver sand, and mixing the whole well together. For drainage use the dry Fern rhizome which is taken from the peat, filling the pot to about half its depth with it.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Violets.—Although Violets are affording an abundance of flowers during the present mild weather, a frame should be placed over them now; the lights need not be put over them until severe weather occurs. A supply of flowers will be thus obtained until those plants that were lifted and planted in pits commence to bloom. Remove all decayed leaves and rubbish from Violets, and let the surface of the soil around the plants be stirred occasionally.

Pentstemons.—Cuttings may still be inserted around the sides of pots and they will quickly make roots. Old stools may be lifted and planted in a frost-proof frame. If it is desired to keep them, especially if the staple soil is cold and of a heavy nature, cuttings that were rooted some weeks ago may be potted off.

Hollyhocks.—Seedlings raised during the summer should be potted. Dust them over occasionally with flowers-of-sulphur, in order to prevent the attacks of fungus. Admit plenty of fresh air to the frames.

Bulbous and Flag Irises.—Lose no time before planting these. Flag Irises may be planted in moist places, and most of them like a little shade. Varieties of Iris Kämpferi are the most beautiful, and should be afforded a mixture of three parts loam and one part peat or good leaf-mould.

Primroses and Polyanthus in double and single varieties should now be planted. If seedlings were raised last summer and were pricked out on a border, they will now move well and flower abundantly next season, especially if planted in rich loam and leaf-mould.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Myms Park, Hatfield, Hertfordshire.

Franeoa ramosa.—This plant is nearly hardy, and may be wintered in a cold frame if room is not available in the greenhouse or cool pit. Its culture is extremely simple, and attention to its few requirements results in the production of a plentiful supply of those charming long sprays of white flowers, which have obtained for this plant the popular name Bridal Wreath. By hastening the flowering of a portion of the plants, and retarding the remainder, the species may be had in bloom from April to July. The grace-

ful habit of the plant when in flower causes it to be much appreciated for conservatory and room decoration, both in pots and in the cut state. If the old plants have not been already repotted let this be done, and there is still time to undertake the propagation of young plants for flowering next summer. The easiest method of effecting this is to divide the old plants, and pot the best rooted of the offsets into 4-inch pots, and place them in a house having an atmospheric temperature of from 50° to 55° for a week or two to make roots, after which they may be shifted into a cool greenhouse, or even a cold frame for the winter. Early in the new year, the plants should be placed in the pots in which they will flower, which, for young plants, need not exceed 6 inches in diameter. Older plants, consisting of six or eight strong offsets, will respond freely to more liberal treatment, and if these be afforded a shift into 8 or 9-inch pots they will form large plants and produce numerous spikes of flowers. Such specimens are very effective for room decoration when placed in large vases, and will remain a long time in perfection. It is a good plan to pinch out the points of the flower-spikes as soon as they appear on a portion of the plants, with the twofold object of retarding the flowering and causing the plants to throw up five or six smaller and more graceful spikes of bloom, in place of one strong one. These smaller sprays are extremely decorative when used in the cut state.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Strawberries.—If ripe fruits are required early in March, the time generally allowed for the forcing is from fourteen to sixteen weeks; preparation should therefore be made now. While the plants are still at rest let them be cleaned over and top-dressed with a compost of fibrous loam, bone-meal, and wood ashes, which should be made moderately firm. If space was left at the time of potting for this top-dressing very little of the surface-soil need be removed. Let the plants be placed on shelves in newly-started Peach-houses or vineries where there is plenty of light and fresh air, and they will succeed. The practice of plunging the pots in beds of leaves producing bottom-heat has a tendency to induce root action too early if the heat exceeds 50°, and when at a later date it is necessary to remove the plants to shelves the greatest care is necessary to prevent them from suffering a serious check. The temperature during the day in mild weather should not exceed 55° without ventilation, and 50° at night will be ample. In severe weather it should be 5° less in each instance. Some of the earliest plants have a tendency to flower at this season, but the flowers should be removed and the plants put back into a later batch. Fumigate the plants for three nights in succession to destroy aphids.

Peaches and Nectarines.—The atmospheric temperature of houses containing second early varieties already started may be very easily kept at from 40° to 45° at night and 50° to 55° by day without the use of fire-heat, unless there is a change in the weather. When the buds show signs of swelling the day temperature may be allowed to reach 60° with sun-heat, but top ventilation should be afforded as soon as 55° is reached. Keep the atmosphere moderately moist by occasionally damping the floor, but at this season a too free use of the syringe is injurious to the buds. Syringe them once early in the day, and this will be sufficient. Cover the outside border as is advised above for Vines.

THE HARDY FRUIT-GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Morello Cherries.—The pruning and training of the trees should be commenced as soon as the leaves have fallen, so that much of the work may be completed before the weather becomes very cold. This advice will apply to all fruit-trees growing against north or east walls. The Morello Cherry, like the Peach-trees, bears its fruits on the young wood, therefore it is necessary to preserve a sufficient number of young shoots for fruiting and for

filling up any bare spaces occasioned by the removal of a certain amount of older wood each season. A well-trained tree should be furnished from the bottom to the top with healthy and fruitful wood. Side-shoots which are not required should be pruned back to within two or three buds from the base, and these also will yield fruit. Until young trees have acquired a properly-balanced foundation it may be advisable to take the whole of the branches from the walls and relay them at equal distances each year; but in the case of larger trees this is not essential. Nevertheless, every tie and shred should be thoroughly examined in order to replace any that, being in the least degree tight, would be likely to pinch the bark. In some instances it may be necessary to tie young shoots over the older branches, using small tar-twine or strong twisted matting, but take care to leave ample space for the swelling of the bark during the coming season. Train each shoot straight, allowing a space of 4 or 5 inches between them. Morello Cherry-trees are frequently left too crowded with shoots. Do not shorten the leading shoots unless they have reached the limit of space. After the work of pruning and nailing has been finished, syringe the trees with some approved insecticide, or with moderately strong soap-suds, adding a small wine-glassful of paraffin to 3 or 4 gallons of hot suds. Keep the whole thoroughly well mixed when applying the liquid to the trees. If the main branches are infested with moss, scrape away the moss and then dress the branches with fresh lime. Afterwards make the borders appear tidy; and if a top-dressing is needed to increase the vigour of the trees, the work may be either done now, or it may be deferred until a later period. The top-dressing may consist of sweet loam, bone-meal, and old brick mortar-rubble. Older trees should be given a much heavier top-dressing than younger trees, but first remove the old soil down to the roots.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

Box Edgings.—When these are allowed to become overgrown they appear untidy, and afford a harbour for slugs. If they have been left for several years without any other attention than clipping it will be best to have the plants taken up and relaid. Before doing this draw the gravel to the centre of the walk with a draw hoe, so that it will not get mixed up with the soil. Then lift the Box with a quantity of soil attached to the roots, and heel-in the plants in some convenient place to prevent them from becoming dry during the time the ground is being prepared previous to replanting the Box. Dig up the border sufficiently deep to allow of an opening being made that will accommodate the Box plants in such a manner that the tips will be from 2 to 3 inches above the soil. When the digging has been done make the ground firm by treading; then lay down the line and pull it tight, and if there appear any uneven spots make them level, and beat the surface firm with the back of a spade. If the line has been placed rightly and kept tight, it should now lie even with the surface of the soil for its whole length, and be exactly uniform with the level of the walk. Now take out the opening in which to lay the Box, sufficiently wide and deep to allow of straightforward work, and in doing so leave the edge against the line straight and firm by striking the back of the spade against the face in the process of cutting. Pull the old Box plants into pieces with roots attached; these should be as nearly uniform in size as possible. Commence to lay at the end of the opening with the left hand to the line, and have the plants placed conveniently near to be lifted with the right hand. Pick up the plants and place them against the face of the opening, keeping them firm with the back of the left hand, and when the length of the hand has been laid press the loose soil up against the Box with the right hand to keep the plants in position. Continue to proceed as before, and when the row has been laid, level in with a spade, and make the ground firm, taking care that when finished the edgings on either side of the walk are of uniform height and perfectly straight.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Nov. 15	Royal Horticultural Society's Committees Meet.
	Hull Chrysanthemum Show (2 days). Chester Paxton Chrys. Sh. (2 days). Reading Chrys. Sh. Liverpool Chrys. Sh. (2 days). York Chrys. Sh. (3 days). Norwich Chrys. Sh. (3 days). Rugby Chrys. Sh. (2 days).
WEDNESDAY, Nov. 16	
THURSDAY, Nov. 17	Linnean Society, Meet. Edinburgh Chrys. Show (3 days). Barnsley Chrys. Sh. (2 days). Grimsby Chrys. and Fruit Exhib. (2 days). Manchester Chrys. Sh. (3 days).
FRIDAY, Nov. 18	Leeds Paxton Chrys. Sh. (2 days). Aberdeen Chrys. Sh. (2 days). Bolton Chrys. Sh.
SATURDAY, Nov. 19	German Gardeners' Club, Meet. Bingley Chrys. and Vegetable Exhib. Cheetham Hill and Dist. Hort. Exhib.

SALES FOR THE WEEK.

MONDAY and WEDNESDAY NEXT—Sales of Bulbs and Plants, at Stevens's Rooms, 38, King Street, Covent Garden, at 12.30.

MONDAY to FRIDAY NEXT—Dutch Bulbs at Protheroe & Morris' Rooms, at 10.30 o'clock each day.

TUESDAY—Clearance Sale of Nursery Stock at the Finchley Nurseries, Finchley, by order of Messrs. B. S. Williams & Son, by Protheroe & Morris, at 12.

WEDNESDAY NEXT—4,000 Roses, 600 Azaleas, 100 Rhododendrons, 100 Aspidistras, &c., from Belgium, 2,640 Spiraeas, &c., at Protheroe & Morris' Rooms, at 5.—Important unreserved Clearance Sale of Nursery Stock on the premises of Messrs. T. Horsman & Son, at the Nurseries at Addingham and Ilkley, Yorks, by Protheroe & Morris, at 11 o'clock (two days).—Sale of 150,000 Fruit Trees and Bushes, at Perry Hill, Cliffe, near Rochester, by order of Messrs. Horne & Sons, by Protheroe & Morris, at 11.

FRIDAY NEXT—Imported and Established Orchids at Protheroe & Morris's Rooms, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—42° 5'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 9 (6 P.M.): Max. 60°, Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 10 (10 A.M.): Bar., 30° 0'; Temp., 50°. Weather very dull, black fog at noon.

PROVINCES.—Wednesday, Nov. 9 (6 P.M.): Max. 59°, South of England; Min. 41°, East Coast of Scotland.

BOUGAINVILLEA "MAUDE CHETTLEBURGH"

(see Supplementary Illustration).—The variety of Bougainvillea depicted in our Supplementary Illustration to the present issue was shown by Messrs. W. BULL & Sons, Chelsea, on various occasions during the past summer, and particularly at the exhibition held at Holland House, Kensington, in July. The variety was remarkable for its unusually large paniced inflorescences, and the size of the brilliantly coloured bracts. Gardeners are familiar with the well-known Bougainvillea glabra and its varieties, and the beauty of all the species when growing in spacious conservatories or corridors that can be heated to the small degree necessary to suit the plants. For several months past two fine specimens have been very effective in the conservatory in the Botanical Gardens, Edgbaston, Birmingham. For the purpose of decorating such structures the new-comer would appear to be as suitable as the better-known sorts, and in that case would be much more effective; but we have had no experience in regard to its habit of flowering, whether free or otherwise.

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, November 17, 1904, at 8 P.M., when the following papers will be read:—1. Lord AVEBURY, P.C., F.R.S., F.L.S., "The Structure of the Stems of Plants," illustrated by lantern-slides; 2. Mr. G. B. BUCKTON, F.R.S., F.L.S., "Observations on Undescribed or Little-known Species of Membracida."

STOCK-TAKING: OCTOBER.—Whilst the general trade of the country languished during the past month, a "boom" in cotton sent up the imports with a bound. The value of imports for October amounted to £49,517,825, against £47,758,188—a difference of £1,759,637.

IMPORTS.	1903.	1904.	Difference.
	£	£	£
Articles of food and drink—duty free	10,245,167	9,811,376	—433,791
Articles of food & drink—dutiable	11,402,859	11,632,704	+229,845
All other Imports...	26,110,162	28,073,745	+1,963,583

The value of Wheat imported last month was £3,892,033; for October, 1903, £2,890,850; of course, supply has to do with this difference. It is interesting to note here that the estimated Wheat crop of Manitoba and the North-west of Canada is placed at 60,000,000 bushels, valued at 43,800,000 dollars, against 51,500,000 bushels, valued at 33,500,000 dollars, in 1903, so there is plenty to come forward.

The value of the cut flowers imported last month is given at £6,362; for October, 1903, £6,988—a fall of £626. Wood and timber again show a decrease; the figures for last month are £2,419,392; for the same period in 1903, £3,244,440—difference, £825,048. The Canadian supply of timber has been giving way for some time. Increased railway accommodation will throw open for the lumberer an enormous extent of virgin forest, and this is promised. We come now to our usual fruit table:—

IMPORTS.	1903.	1904.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw—			
Apples	932,655	613,704	—318,951
Apricots and Peaches	46	67	+21
Bananas—bunches ...	264,757	360,494	+95,737
Grapes	263,486	273,695	+10,209
Lemons	83,350	63,190	—20,160
Nuts—Almonds ...	34,564	36,424	+1,860
Others used as fruit	110,933	133,490	+22,557
Oranges	78,579	39,587	—38,992
Pears	52,223	63,850	+11,627
Plums	38,487	17,747	—20,740
Unenumerated ...	70,565	32,993	—37,572
Vegetables, raw—			
Onions ... ..bush.	934,546	732,807	—201,739
Potatos ... ..cwt.	1,113,664	281,887	—831,777
Tomatos	42,350	45,853	+3,503
Unenumerated ..	16,697	14,312	—2,385

As to dried fruit, we note the arrival of £395,898 worth of currants and raisins, against some £460,418 for the month of October in last year—a decrease of £64,520. The value of the imports for the ten months just expired is £447,875,447—for the same period last year £441,904,658—a gain of £5,970,789. The—

EXPORTS

for the past month are valued at £25,413,687, against £25,861,180 for October last year—a fall of £447,493. For the finished ten months we record a total of £246,632,475; for the same period last year £213,239,985—an increase of £3,392,490. The returns for the month of October cover some 266 pages of an almost blinding set of figures.

ROYAL HORTICULTURAL SOCIETY.—The next two Exhibitions and Meetings will be held on Tuesdays 15 and 29 inst. The first show of Colonial-grown Fruit, and of Home, Colonial, and Foreign-grown Jams and Preserved Fruits will be held on December 13 and 14.

—The following are the dates fixed for the meetings of the Royal Horticultural Society during 1905:—January 3, 24; February 14, 28; March 14, 28; and March 30 to April 1 (second

Colonial Fruit and Vegetable Show); April 11, 25; May 9, 23; May 30 to June 1 (Temple); June 20; July 4, 18; August 1, 15, 29; September 12, 26; October 10 to 12 (British Fruit); October 24; November 7, 21; December 5, 19. The dates of the Auricula, Carnation, Tulip, Autumn Rose, and Autumn Vegetable Shows are not yet decided.

THE ROYAL GARDENERS' ORPHAN FUND.—

We are informed by Mr. WYNNE, Secretary to this Fund, that the seventeenth Annual Dinner has been arranged to take place at the Hotel Cecil, Strand, W.C., on Thursday, May 11, 1905, upon which occasion the Rt. Hon. the Earl of MANSFIELD has kindly consented to preside.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—

We are informed by Mr. A. J. BROWN, The Honorary Local Secretary, Jessamine Cottage, Chertsey, that the sixth annual concert in aid of this Institution will take place on November 17 in the Constitutional Hall, Chertsey, at 8 P.M. Lord and Lady LUCAN, Lord and Lady ZINGHAM, and the High Sheriff of Surrey and Lady STERN have promised their support at the concert, which we hope will be well patronised, so that a considerable sum may be obtained for the mitigation of distress among gardeners and gardeners' widows.

HORTICULTURAL CLUB.—The next meeting of the members of the Club will take place on Tuesday, November 15, at 6 P.M., at the Hotel Windsor, when Professor G. S. BOULGER, F.L.S., Vice-President of the Selborne Society, will speak of "GILBERT WHITE and the Work of the Selborne Society."

UNIVERSITY OF LONDON.—The following is a Syllabus of a course of lectures "On recent investigations in Economic Botany," to be delivered at the Chelsea Physic Garden, on Fridays, at 4.30 P.M., during the Michaelmas term, 1904, by W. G. FREEMAN, Esq., B.Sc., A.R.C.S., Superintendent of the Colonial Collections of the Imperial Institute:—

LECTURE I. (November 11).—General.—Scope of Economic Botany. Working Organisation. Past results. Present-day questions. Sugar-producing plants. Sugar-cane. Cultivation and manufacture of Sugar.

LECTURE II. (November 18).—Sugar-cane. Improvement. Bud variation. Chemical selection. Seminal variation.

LECTURE III. (November 25). Sugar-cane. Importance of factors other than sugar content. Disease resistance.

LECTURE IV. (December 2).—Sugar Beet. Summary of past work. Improvements effected by seed selection. Composition as affected by environment. General summary of Sugar production.

LECTURE V. (December 9).—Cotton. Source. Other vegetable Cottons. Improvement of Cotton.

LECTURE VI. (December 16).—Improvement of cereals, especially of Indian Corn. Breeding for specific industrial requirements. Possible future problems.

INFLUENCE OF COLOURED LIGHT ON VEGETATION.—I am anxious to obtain references to modern experiments in the use of coloured glass on the development of leaves, flowers, and fruits under cultivation. If any experiments have been made on Violets under glass of any colour than white I shall be very glad to hear of them. Of course I know of M. BERT's experiments on the sensitive plant under coloured bell-glasses, and those of General PLEASANTON on Grape-Vines, in which he used violet and white glass in alternate rows. His results were wonderful, as corroborated by Mr. ROBERT BUIST, but Grape-culture goes on under white glass all the same. I shall be very grateful for any references as to modern work or experiments under the influence of coloured light on the lines above indicated. F. W. Burbidge, Dublin.

THE VILMORIN MEMORIAL.—According to a note in the *Revue Horticole* the number of subscribers up to the present time amounts to 2138, and the total sum to 21,155 francs, about £846. Contributions have been received from various countries, and a very large number are of small amount, many of fifty centimes only, a circumstance which shows in what general esteem M. de Vilmorin was held.

MEDALS AT THE CRYSTAL PALACE.—We are informed by Messrs. THOS. ROCHFORD & SONS, LTD., Turnford Hall Nurseries, Broxbourne, that their exhibit of flowering plants at the National Chrysanthemum Society's show last week was awarded a Gold Medal.

BRITISH GARDENERS' ASSOCIATION.—A meeting to consider the formation of a district branch of the British Gardeners' Association was held on November 2 at the Station Café, Sunderland. The meeting was addressed by Mr. W. HALL, General Superintendent of the Sunderland Parks, &c., as an official representative of the Association. After discussion it was unanimously resolved to form a Sunderland branch of the Association, and as a result of the meeting the names of thirty-two additional local gardeners and seedsmen wishing to become members of the Association were forwarded to the Secretary. Similar meetings will shortly be held in the North, at Bradford (on the 17th inst.), Newcastle and West Hartlepool; and in the South, at Bournemouth and Croydon. *W. Watson, Secretary.*

LAVATERA ARBOREA.—This shrub is now common on certain parts of the Kentish coast, but whether it is an aboriginal native is doubtful. Here and there a variegated form of it may be seen. The Belgians make use of it as a dot-plant in flower beds; and one very effective bed that we saw recently close to the sea consisted of a centre of the variegated *Lavatera* surrounded by a broad ring of coloured curled Kales, edged by a border of some white zonal *Pelargonium*. The effect was bold and good, suitable for the situation, though it might be too coarse for the flower-garden proper.

PHALLUS IMPUDICUS ON VINES.—Dr. GY. DE ISTVÁNYFI describes, in the *Annales de l'Institut Central Ampelologique Hongrois*, the manner in which that stinking fungus, *Itthyphallus impudicus*, attacks the Vines in Hungary. Happily in this country such attacks are not known. The fungus and the affected Vines should be destroyed, and the roots watered with a solution of 8 to 10 per cent. of bisulphite of calcium.

TROWBRIDGE HORTICULTURAL SOCIETY.—One of the oldest horticultural societies in the kingdom, this is still a flourishing one. At the annual meeting held a few days ago it was stated that despite a wet show-day the loss on the year was slight, and that there is a reserve-fund in hand of some £400, while the show-field close to the railway-station is also in possession of the Society. Much of the recent success of the Society is due to the services of Mr. G. ERNEST SNAILUM, the Secretary.

ARMAND DE MEULENAERE.—The death of this gentleman at Ghent is announced. He was Secretary to the Société Royale d'Agriculture et de Botanique, and had barely completed the arrangements for the Quinquennial of 1903 before he began to occupy himself with the preliminary measures for that of 1908. M. DE MEULENAERE was greatly beloved by his fellow-citizens, and specially by his fellow-workers. The *Revue de l'Horticulture Belge* in a warmly-sympathetic notice speaks of him as a model secretary.

APPLE "MARBRÉE DE WATERVIET."—A name indicative of the curious variegation of the fruit, and of its place of origin. It is a globular Apple, rather narrowed at the apex, of

medium size, with a short stalk set in a deep basin; brilliant red in colour, but curiously marked with irregular yellow lines and blotches. It is spoken of as an excellent Apple, and is described and figured in the October number of the *Bulletins d'Arboriculture*, &c.

"BLACK-LEG."—Under this name is described a rotting of the Potato-haulm caused by a bacillus, which was described fully in our columns, July 9, 1904, p. 28. The disease spreads with the greatest rapidity during hot, damp weather, the tubers becoming infected by the bacteria washed down from the stem. Hygienic measures of prevention are recommended in a leaflet (No. 117) published by the Board of Agriculture.

"SOME ENGLISH GARDENS."—A handsome volume has just been published by Messrs. LONGMANS, GREEN & Co. under this title. It is delightfully illustrated after drawings by Mr. G. S. ELGOOD, and annotated by Miss Jekyll. Our columns are so crowded that we must content ourselves for the present with the mere announcement of the publication of a volume, and the bald statement that the book is an important addition to gardening literature.

"BOTANICAL MAGAZINE."—The November number of this publication contains coloured illustrations and descriptions of the following plants:—

Allium albopilosum, C. H. Wright, t. 7982. — The handsome Turkestan species, figured and described in our columns, 1903, ii., p. 346. Hort. Kew.

Hedipterum splendidum, Hemsley, sp. n., t. 7983. — A very showy "everlasting," closely allied to *H. (Rhodanthe) Manglesii*, but with longer, erect flower-heads, and very numerous spreading, lanceolate, silvery bracts. Hort. Kew. A most desirable plant for greenhouse culture if seed can be obtained. The Kew plants did not ripen their seed. The species is a native of West Australia.

Cryptostegia madagascariensis, Bojer, t. 7984. — A very beautiful climber, like a *Dipladenia*. It is a native of Madagascar.

Dendrobium bellatulum, Rolfe, t. 7985; see also *Gardeners' Chronicle*, 1904, i., 258, and ii., 114, fig. 47.—Introduced from Yunnan by Mr. WILSON, and from Assam by Mr. W. MICHOITZ.

Iris Bismarckiana, Dammann, t. 7986; see also *Gardeners' Chronicle*, 1904, ii., 222.—A species from the Lebanon. The falls are yellowish with a large central purplish-brown blotch near the base, and numerous purple spots; the standards or petals are erect, pale lilac, with veins of a deeper colour and a few purple spots.

THE ST. LOUIS EXHIBITION, U.S.A.—The official list of awards made at the St. Louis Exhibition include the following:—

DEPARTMENT OF HORTICULTURE.

Group 105.—Appliances and Methods of Pomology: Grand Prize.—Board of Agriculture and Fisheries, Royal Horticultural Society, the British Royal Commission. Gold Medal.—Dr. Henry. Silver Medal.—J. Cheal & Sons, Minton, Hollins & Co. Awards to Collaborators.—Gold Medal.—W. Goldring (the British Royal Commission), T. W. Brown (the British Royal Commission).

Group 108.—Trees, Shrubs, and Ornamental Plants: Grand Prize.—William Cutbush & Son, Sutton & Sons. Gold Medal.—James Carter & Co., John Forbes, H. Cannell & Sons, Kelway & Son, Sander & Sons. Silver Medal.—J. Cheal & Sons, Amos Perry, Hobbies (Limited).

Group 110.—Seeds and Plants for Gardens.—Gold Medal.—Sutton & Sons.

DEPARTMENT OF FORESTRY.

Group 112.—Appliances and Processes used in Forestry: Gold Medal.—Forest Department, India. Silver Medal.—The Royal Scottish Arboricultural Society, C. Richardson.

Group 114.—Appliances for gathering Wild Crops.—Gold Medal.—The Wellcome Chemical Research Laboratories.

NATIONAL FRUIT GROWERS' FEDERATION.—A meeting of the Council was held at Caxton Hall, Westminster, on Monday, November 7. Mr. F. S. W. CORNWALLIS presided. The subject of railway rates and facilities, and sundry complaints of members relating thereto, were discussed at some length. The Council were unanimously of opinion that the time at their disposal was quite inadequate for the full investigation and discussion of the details of the numerous cases brought to their notice by members, and it was decided to appoint a committee to deal specially with Railway Rates and Facilities. This committee will consist of two members from each fruit-growing district. These gentlemen will be empowered to call local meetings when required, at which grievances and suggested improvements can be considered, and forwarded to the Central Committee, who will report to the Council. It was reported from the Evesham district that the action of the Federation had resulted in great benefits to the growers in Worcestershire, as, besides great improvements in the vans, &c., a substantial reduction in freights had been granted, amounting in some cases to 7s. 6d. per ton. The subject of insurance was also discussed, and arrangements are being made whereby members of the Federation can secure an allowance of 5 per cent. on premiums for nearly every kind of insurance business.

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 1.—Present: Dr. M. T. Masters, F.R.S. (in the chair); Messrs. Chittenden, Saunders, Walker, Worsley, Douglas, and Hooper; Dr. M. C. Cooke; Revs. W. Wilks and G. Henslow, Hon. Sec.

Herbertia Bulbs.—With reference to the specimens brought to the last meeting, they were wrongly alluded to as "droppers."

Nerine, hybrids.—Mr. WORSLEY brought interesting specimens of hybrid varieties raised by himself.

Hippocastrium, hybrid.—He also showed the result of a cross between *H. aulicum* ♀ and *H. equestre* ♂. It was strictly intermediate. Also a hybrid between *H. aulicum* ♀ and *H. vittatum* ♂.

Pears, crossed and self-fertilised.—Mr. CHITTENDEN showed drawings illustrating the results on Durondeau. The Pears had nearly the same mean size, with the exception that the width across the upper part was on the average of 2½ in. in the self-pollinated and 2¾ in. in that of the crossed. With regard to the optimum temperature required for the fertilisation of Pears, Mr. WORSLEY observed that 70° was necessary for Marie Louise; Mr. WALKER adding that it was useless to attempt to grow it on the Welsh coast. Mr. BUNYARD remarked that Gloria Mundi was a bad self-fertiliser, but was very good with other pollen. The fruit usually bore furrows; these disappeared from the fruit if the flower had been crossed. With regard to the Beauty of Kent, it bore well on chalk, according to Mr. CHITTENDEN. Other varieties were alluded to, from which it would seem that the nature of the soil and climate, as well as pollination, were matters of consideration.

Gazania, foliaceus.—Mr. HOOPER showed an inflorescence in which the bracts of the involucre had become long and leaf-like, while the florets of the head were abortive.

Twin Maize Seedlings.—Mr. CHITTENDEN showed two seedlings arising from a single grain. On examination they proved to be from two embryos standing on opposite sides of the grain, with a single mass of endosperm between them.

Black Apple-rot.—Dr. COOKE reported on this disease as follows:—"The fruit is pitchy-black externally, with a tough and leathery rind. The core was full of mycelium, and the substance of the Apple rotten. In the centre and around the core were sclerotiform bodies. These resembled the sclerotium disease of Potato haulms. It is at present impossible to determine the fungus, though Mr. MASSEE suggests it may be *Monilia fructigena*, which bears a Peziza-like fructification."

Corticium on Chrysanthemum.—Dr. COOKE also reported upon this disease: "There is a white floccose

inerustation, but there is no evidence that it occurs upon living plants as a true parasite. It is probable that the fungoid growth belongs to the preliminary condition of the sclerotium disease of Potato haulm."

WEST OF ENGLAND CHRYSANTHEMUM.

NOVEMBER 1.—The exhibition of this Society was opened on the above date at the Plymouth Guildhall. An excellent show was provided, the cut blooms, although rather fewer in number than in the preceding year, were of exceptionally high quality, while the pot-plants, both in the groups and in the different classes, evidenced good culture, and the numberless dishes of Apples and Pears in the fruit classes were quite a show in themselves. Vegetables also were distinctly above the usual standard.

In the premier class for forty-eight Japanese blooms, 1st prize was won, as in 1903, by Mr. F. S. VALLIS, with a marvellously-good stand of enormous blooms in good condition, which was awarded the Society's Certificate of Merit. This stand contained in Montigny one of the finest Chrysanthemum blooms that has ever been exhibited upon a show-board. It is one of Calvat's new seedlings, and was sent out this year. In colour it is a clear but pale yellow, and the exceptionally broad petals are inclined to incurve. This flower, measured by one of the executive, proved to be a foot in diameter and over 7 inches in depth. It was awarded a Special Commendation as the finest exhibit in the show. Mr. Vallis stated that the variety was of very easy culture, and that his plant was bearing two more blooms fully equal to the one exhibited. Other particularly fine flowers in this stand were F. S. Vallis, Henry Perkins, Marquis V. Venosta, Mrs. Barkley, Mrs. Vallis, Madame P. Radaelli, and Bessie Godfrey; but all were first-class blooms. 2nd prize, Mr. G. W. DRAKE, with a very good stand. 3rd prize, Mr. J. R. GULSON.

For twenty-four Japanese blooms, Mr. F. S. VALLIS obtained 1st prize with an almost perfect stand. 2nd, Mr. J. R. GULSON. 3rd, Sir JOHN SHELLEY.

For eighteen Japanese blooms, distinct, in vases, the 1st prize was won by Mr. B. H. HILL. 2nd, Mr. J. E. C. BOOLDS. 3rd, Sir JOHN SHELLEY.

Mrs. A. REED won the 1st prize for twelve vases of single Chrysanthemums.

In the classes open to residents within 15 miles of Plymouth some very fine blooms were shown, those exhibited by General Sir REGINALD POLE-CAREW especially being quite equal to winning prizes in the Open classes. The prize-winners in these classes included General Sir REGINALD POLE-CAREW, Mr. T. MARTIN, Mr. H. TRITTON, Lady BULLER, and Mrs. BAINBRIDGE.

The 1st prize for a group of Chrysanthemums was won by Mr. G. SOLTAN-SYMONS with a large and fine collection of plants bearing enormous blooms. 2nd prize, Mrs. U. C. DORMER. 3rd prize, Mr. ALDOES.

Seven classes were devoted to specimen Chrysanthemums, and they were well filled with decorative plants. Other classes were allotted to Primulas, Cyclamen, Roman Hyacinths, Pelargoniums, Orchids, and winter-flowering Begonias; Mrs. BAINBRIDGE'S zonal Pelargoniums, which took the 1st prize in their class, were remarkable for their excellent culture.

Groups of miscellaneous stove and greenhouse plants, bouquets, wreaths, and crosses completed the floral display.

The thirty-three fruit classes were well filled, the chief prizes being carried off by Sir JOHN SHELLEY, General Sir REGINALD POLE-CAREW, the Earl of MORLEY, and the Earl of MOUNT-EDGUMBE. The Earl of MORLEY also won 1st prize for a collection of salads.

For vegetables the majority of the prizes were divided between Mr. B. H. HILL and Sir JOHN SHELLEY.

Nurserymen's stands formed an interesting exhibit. Messrs. SUTTON & SONS, Reading, showed a collection of new varieties of Potatoes, for which they were awarded the Society's Certificate of Merit.

The DEVON ROSERY, Torquay, contributed a stand containing a large assortment of cut Roses and hardy fruits. The Roses were from their open grounds, and included the new Frau Karl Druschki, which was especially lovely, and such sorts as The Bride, G. Nabonnand, Sunset, Mrs. Sharman Crawford, Victor Hugo, Gruss an Teplitz, and Augustine Guinoisseau, forming a pleasing display. The Company also staged a large collection of Pears and Apples.

Messrs. R. VEITCH & SON, Exeter, had a large stand, on which were to be seen *Hypericum patulum* Henryi, *Acacia platyptera*, *Primula Kewensis*, *Browallia*

speciosa major, Christmas Roses, *Andromeda arborea*, *Cotoneaster frigida*, *Euonymus europæus* albus, and various Hollies all freely berried, a dish of large crimson fruits of *Thladiantha dubia*, and many other interesting plants. Messrs. VEITCH also staged a collection of Chrysanthemum blooms, a selection of Apples and Pears, and also one of Potatoes, including the celebrated Eldorado.

Messrs. T. CHALICE, Plympton, showed the new *Nephrolepis Pearsoni*, and another novelty, *Smilax asparagoides myrtifolia*, as well as a general collection of greenhouse plants.

Messrs. SAUNDERS & BISS, horticultural builders, Exeter, exhibited specimens and sections of their patent glazing.

Mr. H. HODGE, St. Austell, staged some hundreds of blooms of tuberous Begonias, both single and double, many of these being very large and beautiful.

Mr. N. LOWIS, Bridgwater, showed a representative selection of the best perennial Asters, or Michaelmas Daisies.

Mr. GROOMBRIDGE, Tothill, staged many excellent Chrysanthemums; and Mr. VINCENT SLADE, Taunton, whose speciality is zonal Pelargoniums, occupied an extensive stand filled entirely with trusses of the finest varieties.

BRIGHTON AND SUSSEX HORTICULTURAL.

(See previous issue, p. 327.)

CHRYSANTHEMUMS—GROUPS, ETC.

For a Group of Chrysanthemum Plants, &c., 14 × 18 feet, Open.—1st, Mr. G. Sims, gr. to F. A. WALLIS, Esq., Sunnyside, Upper Lewes Road, Brighton. This was a boldly-conceived group of varied colours, white, mauve, yellow, and pink Japanese varieties, each plant being good of its kind. Mr. HEAD, The Drive Nursery, Hove, was 2nd, with a somewhat similarly-arranged group, but with the more prominent features of lesser height, and the colours on the whole less striking; but the larger-flowered Japanese heads of bloom were if anything more massive than in the winning group.

Smaller Groups (Open).—1st, Mr. H. Skinner, gr. to J. DUNK, Esq., Rose Villa, Stanford Avenue, Brighton, for Chrysanthemum plants arranged with Ferns, &c., any design being allowed. This group consisted of various yellow, white, and mauve Japanese varieties, mostly of large development, and put up in masses of one colour. The 2nd prize fell to Mr. W. E. ANDERSON, gr. to B. PARRISH, Esq., Melodia, Preston Park. A semi-circular group of the ordinary character and blooms of moderate sizes. The green-flowered variety was observed amongst them.

Group of Chrysanthemum Plants, Amateurs and Gardeners only.—The 1st prize here was taken by Mr. W. E. ANDERSON with a semi-circular group of mixed Japanese varieties, fresh-looking and varied sufficiently in colour and form as to make a pleasing whole. 2nd, Mr. A. J. Blake, gr. to W. E. BLACKISTON, Esq., Bleak House, Dyke Road, a simple group of plants having plenty of foliage and fairly well-developed flowers.

The best four pyramidal-trained Chrysanthemums, distinct, were those shown by Mr. W. E. ANDERSON, and the next best by Mr. G. LAMBERT, 17, Bognor Road, Chichester. With standard plants, Mr. W. E. ANDERSON was 1st with four very beautifully bloomed, and standing 5 feet high. Mr. J. HILL was 2nd.

Six Bush Plants.—1st, Mr. G. LAMBERT, 17, Bognor Road, Chichester, with President Nonin, Mr. Barrett, and Chas. Davis. 2nd, Mr. W. E. ANDERSON, gr. to Melodia.

CHRYSANTHEMUMS—CUT BLOOMS (OPEN).

Thirty-six Japanese in not fewer than twenty-four varieties brought a large number of fine, large, even-sized flowers. The winner of the 1st prize and Silver Bowl presented by J. M. Kidd, Esq., was Mr. A. Simmons, gr. to Sir F. OSBORNE, Bart., Framfield, and the Society's Silver Medal, who was the winner of the bowl in 1902. Very fine examples were F. S. Vallis, Kimberley, Mad. P. Radaelli, Mad. Carnot, W. R. Church, Beauty of Leigh, Mrs. W. Mease. Mr. J. Pitts, gr. to E. ASCHERSON, Esq., Pitt Place, Charing, Kent, was 2nd. This stand contained excellent blooms of Duchess of Sutherland, Violet Lady Beaumont, Florence Molyneux, Mrs. Barkley, Captain Percy Scott, Madame P. Radaelli, and Mrs. Coombes. The competition was strong in this class. 3rd, J. Pitts, gr. to E. ASCHERSON, Esq., Charing, Kent.

Twelve Incurveds.—1st, Mr. G. HART, with capital blooms of Frank Palmer, Bruant, Ma Perfection, Matthew Russel, Topaze Orientale, Mr. H. Jones, Lady Isabel, and Globe d'Or. 2nd, Mr. W. Hill, gr. to G. W. RYDER, Esq., Broad Hill, Keymer; Edith Hughes, C. H. Curtis, Miss V. Tomlin, Hanwell Glory, Miss A. Hill, Globe d'Or, and Ernest Cannell being the finest examples.

Twelve Japanese.—1st, Mr. H. Poulton, gr. to C. T. CAYLEY, Esq., Huntleys, Tunbridge Wells, with a very fine stand, of which Lily Mountford, Ethel Fitzroy, Miss Mildred Ware, J. R. Upton, Miss Alice Byron, W. R. Church, General Hutton, and Bessie Godfrey were the more remarkably fine examples. 2nd, Mr. J. PILLING, with Duchess of Sutherland, Mr. F. S. Vallis, G. Penford, W. R. Church, as the finer blooms.

Mr. J. Pelling, gr. to Rev. E. C. M. STEWART, Framfield, was 1st for six Japanese, with Mr. F. S. Vallis. 2nd, Mr. A. SIMMONS, with Duchess of Sutherland.

Mr. M. TOURLE was 1st for six incurveds of one variety, with excellent examples of W. Russell (a red-dish-bronze). Globe d'Or won the 2nd position for Mr. G. HART.

Vases of Chrysanthemums, arranged with autumn foliage.—1st, Mr. J. Davis, gr. to Major TRUELOW, Buckham Hill House, Uckfield, the foliage being that of *Rhus typhina*, *Ampelopsis Veitchii*, common *Barberry*, and *Prunus pissardi*, and the effect very pleasing. 2nd, Mr. A. Findlay, gr. to Count MUNSTER, Maresfield Park, Uckfield.

In the foregoing class special prizes were offered by Mr. H. Head, of The Drive Nursery, Hove. Altogether these exhibits proved of much interest to the visitors, showing what could be achieved with simple materials if the work is carried out in a bold fashion.

Dinner-Table Arrangement with Chrysanthemums.—1st, Mrs. RAPLEY, East Grinstead. In this only a yellow starry variety was employed for the central stand, which was nearly 3 feet high, and in the four corners low stands. 2nd Mr. M. TOURLE, with a less simple arrangement, in which *Rhus*, *Ampelopsis Veitchii*, and other foliage entered. There were six competitors in this class.

There were Three Tables of Mixed Chrysanthemums as cut blooms mixed with Fern fronds and Ferns in pots, small Palms, Eulalias, *Burmanna variegata*, &c. The 1st prize went to Mr. G. MILES, Victoria Nursery, Brighton; the 2nd to Mr. H. HEAD, Hove.

Twelve Japanese distinct, arranged in Two Vases.—1st, Mr. C. Knowles, gr. to Rev. Prebendary NAPIER, Steyning. The vases contained blooms of Lady Hanham, Mafeking Hero, and Mrs. C. H. Payne. 2nd, Mr. A. Sayers, gr. to S. COPESTAKE, Esq., 1, Adelaide Crescent, Hove. The finest blooms were Mr. T. Carrington and W. Abbott.

AMATEURS' DIVISION.

A Group of Chrysanthemums, 10 × 5 feet, quality and effect to be mainly considered. 1st, Mr. T. WELLS, Bugle Inn, St. Martin Street, Brighton, with a group of plants ranging from 3 to 6 feet in height, and furnished with blooms of moderate size. 2nd, Mr. A. W. PHILLIPS, 4, Robertson Street, Brighton; many of these plants were very tall.

Eighteen Japanese, not fewer than twelve varieties: Brighton Amateur Challenge Trophy.—This competition brought three stands, in which the blooms were very near in point of quality, and some judges might have been disposed to award the 1st prize to that which obtained the 2nd. Evidently the judges considered the smoother incurved varieties were superior to the more spreading confused blooms of the other stands. 1st, Mr. T. WELLS; and 2nd, Mr. F. BRETT, Clovelly, Preston Park.

SPECIAL PRIZES.

Twelve pots of Chrysanthemums.—Mr. G. LAMBERT, 17, Bognor Road, Chichester, took Messrs. R. & N. Norman Bros.' 1st prize with dwarf plants, with about a dozen blooms on each.

NEW VARIETIES.

Messrs. W. WELLS & Co., Redhill, Surrey, exhibited blooms of the quite new Chrysanthemum E. J. Brooks, an incurved Japanese, plum coloured, with white reverse, an enormous globular flower; Mrs. G. Hedeome, Japanese, salmony-buff, a delicate shade of colour; Mrs. W. Knox, deep yellow, with slight shade of bronze; Mrs. J. E. Dunne, Japanese, of a terra-cotta tint, with long, drooping florets; Mrs. F. P. Thompson, white, with a faint blush tinge, a very fine flower; Dora Stevens, Cheltoni, J. H. Doyle, and J. H. Salisbury, in commerce for several years, were likewise shown.

FRUIT (OPEN).

Mr. A. B. Wadds, gr. to Sir W. D. PEARSON, Bart., M.P., Paddockhurst, took 1st for three bunches of Black Alicante Grapes, massive, well shouldered. 2nd, Mr. W. Manton, gr. to the Rev. R. MASHITER, The Grange, Herstpierpoint, for the same variety, irregular in shape of fruit, but large berries and splendid bloom. 3rd, Gros Maroc, shown by Mr. POLLTON, gr. at The Huntleys, the handsomest bunches and of unblemished appearance.

Excellent Black Alicante Grapes (three bunches) were shown by Mr. H. Macfadyen, gr. to L. BREITMEYER, Esq., Cuckfield Park; Black Hamburg by Mr. J. HILL, gr. Springfield; and Muscat of Alexandria by Mr. H. Harris, gr. to E. M. EVERSFIELD, Esq., Deane.

Yark (1st); and Mr. T. Dancy, gr. to Mrs. CREYKIE, Holbrook, Horsham, was 2nd.

J. COLBORNE, Esq., Lenden, Ditchling, showed (not for competition) twenty-five dishes of Apples of superior quality, and varieties not much grown.

In the Upper Hall of the Corn Exchange the entire area was taken up with exhibits of Pears, of which there were magnificent examples of Beurré Diel, Pitmaston Duchess, Catillac, Uvedale's St. Germain, Beurré Bachelier, Duchesse d'Angoulême, Doyenné du Comice, Durondeau, Madame Benoist, Beurré Alexander Lucas, Marie Louise, Emile d'Heyst, Charles Ernest.

The Sussex Apples were as fine as we have observed these fruits anywhere, being large, clear in the rind, and with no blemishes of any kind, and the higher-coloured varieties had their tints brought out splendidly. Particularly fine were Peasgood's Nonesuch, Emperor Alexander, Cox's Pomona, Lane's Prince Albert, Warner's King, Blenheim Orange Pippin, Ribston Pippin, Cox's Orange Pippin, Alfriston, Belle du Bois, and Gascoyne's Scarlet.

NON-COMPETITIVE EXHIBITS—VARIOUS.

Messrs. J. CHEAL & SON, Crawley, showed fine flat or semi-globular, large-flowered Chrysanthemum plants, beautifully flowered, and not too stiffly trained. Very good were Mrs. Mease, Madame Ricaud, Eva Knowles, Mrs. T. W. Pockett, President Nonin, Kimberley. In the front of the line of specimens, numerous dishes of Apples and Pears were arranged, together with small vases of cut flowers of Chrysanthemum plants, of Dracenas, Crotons, fruiting Oranges, Solanums, &c. Most of the Apples were finely grown and high in colour, and were inclusive of the best of the newest and older varieties. We noted Rival, Newton Wonder, Nanny, Wealthy, Washington, The Queen, Annie Elizabeth, Peasgood's Nonesuch, Sandringham, Cox's Orange Pippin, Newton Wonder, Royal Jubilee, Lane's Prince Albert, Bismarck, and Chas. Ross. Among the Pears shown were Duchesse du Mouchy, Josephine de Malines, General Todleben, Duchesse de Nemours, &c. Altogether an interesting exhibit.

Messrs. LALCHIN & SONS constructed a species of alcove in woodwork open on three sides, in which they displayed choice flowering plants, including many Orchids, Lily of the Valley, Begonias, Pandanus Veitchi, small Palms, and other decorative plants, together with designs in flowers of harps, shields, a broken wheel, and other examples of the florist's art. The whole when night came on was lighted by electric glow-lamps.

To the left of the central decorative group set up by Messrs. W. Balchin & Sons, Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed a collection of Tree Ives with variegated foliage, well-berried Skimmias, Aucubas, and others; Eurya latifolia, Clematis, Pyracantha in fruit, Bamboos, &c.

Messrs. W. MEED & SON, Burgess Hill, showed a collection of their graceful terra-cotta garden wares, such as vases, &c.

Mr. G. MILES, Victoria Nursery, Brighton, arranged on the floor a group consisting of Orchids, such as Cattleya Mendeli, Oncidium concolor, Carnations, Primulas, Begonia, and various Codieums, the whole being backed with tall plants of Chrysanthemums and Asparagus.

Messrs. J. AMBROSE & SON, Nurserymen, Cheshunt, Herts, showed bunches of Melton Constable Grape, together with a mass of written and printed testimonials concerning it. The firm also displayed a brightly-coloured collection of blooms of Tea Roses, Lily of the Valley, and Carnations.

In the Root and Vegetable section, Messrs. J. Cheal & Sons' and Messrs. W. Meed & Son's special prizes brought a number of exhibits, some of which merited, in the case of Brussels-Sprouts, Cauliflowers, Celery, and Onions, on the score of great size.

MISCELLANEOUS.

Mr. G. EASTWOOD was 1st for double-flowering Primulas, showing white and rose-coloured varieties.

Twelve Single-flowered Chinese Primulas.—The 1st in this class was won by Mr. G. Eastwood, gr. to Mrs. GOLLIN, Downs Hotel, Hassocks, with well-grown floriferous examples in 32's.

A Collection of Orchids.—The winning table of these plants, consisting of Cattleya Mendeli, Oncidium concolor, a few Odontoglossum crispum, and various Cypripediums, was set up by Mr. H. Garnett, gr. to R. G. FLETCHER, Esq., Mount Harry, Withdene. Mr. G. Stratford, gr. to Dr. TULK-HARDY was 2nd, with a table of foliage plants set off with a few Orchids.

Twelve Begonias.—Mr. G. Chandler, gardener to R. J. BOLLINGTON, Esq., Lea Hurst, Withdean, was 1st for Begonia Gloire de Lorraine, neat little plants about 2 feet high, covered with pink or white flowers. 2nd, Mr. J. SMITH, gr. Withdean Grange, with globular-shaped plants.

CHELTENHAM CHRYSANTHEMUM.

Nov. 2.—The annual exhibition of the Cheltenham Root, Fruit, Chrysanthemum, and Winter Flower Society was opened at the spacious Winter Garden, Cheltenham, on the above date, and the word "record" was writ large on every feature. The grand total of entries reached 600, a healthy increase upon last year's 490, and what was more satisfactory to the promoters, this advance was evident in every class. In the fruit and flower departments the entries were 321, compared with 226 staged at the previous show. The Cheltenham Corporation Cup for Chrysanthemums was for the second time won by Mr. W. MOORMAN, of Leckhampton; another win and it will become his absolute property.

Col. Rogers' Silver Cup for the best group of Chrysanthemums now finds a final resting-place at Cowley Manor, Mr. HORLICK having won it a third time. The Silver-plated Cup presented by Mr. J. Simmons for the best dish of dessert Apples exhibited by a competitor residing within six miles of Cheltenham, was taken by Mr. FRANK TAYLOR. Mr. Councillor Bence's Silver Cup for the best collection of hardy fruit fell to Mr. W. MOFFAT, of Goodrich Court, Ross; and the Baron de Ferrières' special prize for the best Chrysanthemum in the show was taken by Dr. FERGUSON. Mr. W. MOORMAN secured a couple of 1st prizes for collections of Chrysanthemums; the Misses DAVIS a 1st prize for a collection of eighteen cut blooms; while Mr. H. O. LORD won the premier prize for a collection of cut blooms and foliage plants. In the fruit section T. SPENCER (Ross) took six 1st prizes for collections of Apples and Pears.

HEREFORD FRUIT AND CHRYSANTHEMUM.

NOVEMBER 2, 3.—The annual exhibition was held in the Shire Hall on the above dates. The exhibits of Apples were especially good, whether in the open classes or in those restricted to amateurs, tenant-farmers, or cottagers. Grapes were splendidly shown, as were also vegetables and Chrysanthemums. Classes were devoted to cider-fruit, fruit packed for market, agricultural roots, grain, &c., the schedule comprising upwards of 100 classes.

APPLES.

The principal class for Apples was one for fifty dishes, which was contested by six exhibitors, the fruit throughout being exceptionally meritorious. Mr. WATKINS, Pomona Farm, Hereford, took the lead with large, highly-coloured fruit. The KING'S ACRE NURSERY CO. followed closely, and were awarded 2nd prize. Mr. WHITING, Credenhill, was 3rd.

In the class for Thirty Dishes. Mr. Grindrod, gr. to G. T. BATES, Esq., Whitfield, Hereford, took chief honours with splendidly-developed specimens. Mr. W. E. Hyde, gr. to W. MAYNARD, Esq., Holt, Leckhampton, was 2nd, staging smaller though equally bright fruits.

Twelve Dessert and Twelve Culinary Apples.—This class created keen competition between six exhibitors. The 1st prize was taken by Mr. W. Jones, gr. to C. W. HAZELHURST, Esq., Moreton Court, his best dishes being those of Cox's Orange Pippin, Blenheim Orange, Ribston Pippin, King of the Pippins, Wealthy, Worcester Pearmain, King of Tompkin's County, Royal Jubilee, Maltster, Gloria Mundi, Annie Elizabeth, Stirling Castle, Loddington, and Lord Derby. 2nd, Mr. WOOTTON, Byford, who showed an almost equally good selection.

Eight Dishes Dessert Apples.—In this class eleven excellent collections were staged, amongst which all the best varieties were repeatedly represented. Mr. J. E. Jones, gr. to H. L. LUTWICHE, Esq., Kynaston, took the 1st prize; J. LLANWARN, Esq., and Mrs. BASHILL being placed 2nd and 3rd in the order named.

The classes for single Dishes of Apples were very strongly contested, and some of the best fruit in the show was found in these classes. Cox's Orange Pippin was represented by no fewer than twenty dishes; Blenheim Orange was brought by thirteen exhibitors; Worcester Pearmain by seventeen, &c. The prize for any other late dessert Apple than those scheduled was given to a dish of Allington Pippin, staged by J. RILEY, Esq.; and for any new Apple introduced during the past seven years, Mr. WHITING was 1st with King's Acre Pippin; followed by Mr. WATKINS with Lord Hindlip, and Mr. ROE with Caradoc Scarlet. Mr. WHITING was again successful for any other kitchen variety with a grand dish of the variety Stirling Castle.

PEARS.

Amongst seventeen exhibitors, Mr. Humphries, gr. to the Earl of CHESTERFIELD, Holme Lacey, Hereford, was a good 1st for twenty-four dishes of Pears, having well-grown examples of Durondeau; Marie Louise, Doyenné du Comice, Nouvelle Fulvie, Duchesse d'Angoulême, Beurré Superfin, B. Sterckmans, B. Perrini, B. Bachelier, E. Diel, E. Hardy, Doyenné d'Alençon, Glout Moreau, &c. Mr. J. E. Jones, gr. to H. L. LUTWICHE, Esq., Kynaston, was placed 2nd.

Twelve Dishes of Culinary, and Six of Dessert Pears.

1st, Mr. HYDE, with good fruit, including Conference, Prince of Wales, Brown Beurré, Beurré Diel, B. Clairgeau, B. Bose, Durondeau, Doyenné du Comice, Pitmaston Duchess, Duchesse d'Angoulême, &c. Mrs. BASHILL was a good 2nd.

Eight Dishes of Pears.—This class was contested by nine exhibitors, whose exhibits ran each other closely, the lead being taken by Mr. Foster, gr. to the Rev. H. BRIERLEY, Bridston, his best dishes being Baile d'Heyst, Nouvelle Fulvie, Doyenné du Comice, Josephine de Malines, Marie Louise, Beurré Baltet Père, Beurré Bachelier, and Durondeau. The Rev. J. DEVONPORT was 2nd; and Mr. GRINDROD 3rd, each staging excellent collections.

Single Dishes.—Marie Louise was staged nine times, those staged by Mrs. BASHILL being placed 1st. Doyenné du Comice was shown best by Mr. HUMPHRIES; and amongst ten entries of Pitmaston Duchess those of the Rev. G. H. DEVONPORT, Foxley, was placed 1st. Mr. WILLIAMS was 1st for any other dessert variety with fruits of Madame Trevey; while for any culinary variety the Hon. R. C. DEVEREUX came 1st with huge fruits of Uvedale's St. Germain.

Champion Classes.—The following persons were successful in these classes.—Best dish of Pears, Mr. HUMPHRIES, with Doyenné du Comice. Best Dessert Apples, Mr. ROE, with Cox's Orange Pippin. Best Kitchen Apples, Mr. C. THOMAS, with Bismarck. Best Cider Apple, Mr. POWELL, Warham, with Kingston Black. Best dish exhibited by a cottager, "Annie Elizabeth," staged by Mr. ARROWSMITH. Best bunch of Grapes, Lady Downes' Seedling, a grand bunch, staged by Mr. GRINDROD.

Collections of Fruit, Six varieties.—The lead was easily taken by Mr. GRINDROD with splendid dishes of Gros Colmar and Golden Queen Grapes, Golden Drop Piums, Pitmaston Duchess Pears, &c. Mr. J. Froggatt, gr. to J. WALKER, Esq., Belmont, being placed 2nd.

Grapes.—Three bunches of Gros Colmar were represented by five excellent stands of fruit, of which Mr. Tarrot, gr. to A. W. FOSTER, Esq., Brockhampton, took 1st; closely followed by Mr. Talliott, gr. to Sir G. H. CORNEWALL; and Mr. GRINDROD. Any other Black variety, 1st, Mr. GRINDROD, with heavy, well-finished bunches of Lady Downes'. Mr. Sampson, gr. to Mrs. HORE, Witney Court, was 2nd with the variety Alicante. Mr. WILLIAMS was 1st for White Grapes with good Muscat of Alexandria; Mr. GRINDROD, 2nd.

Miscellaneous.—Mr. WILSON, Seedsman, Commercial Street, Hereford, staged a large and in every way splendid display of bouquets, wreaths, vases of choice flowers, &c. The KING'S ACRE NURSERY CO. exhibited a large collection of miscellaneous decorative plants.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 2, 3.—The annual show was held in the Victoria Hall, and was a success in every respect. Exhibits of plants were both numerous and good. In the class for a group of Chrysanthemums four growers competed. Mr. C. HOSEY, gr. to J. C. E. D'ESTERRE, Esq., Elmfield, Southampton, won 1st prize with dwarf plants carrying good blooms. Mr. B. HENLEY, Loomsbury Walk, Woolston, was 2nd.

Conservatory specimens were well staged by Mr. HOSEY, who was 1st in the class for four plants, having well-grown examples of Mrs. G. Mileham, Mars, Louis Remy, and Nellie Pockett.

For plants grown naturally and without disbudbing, Mr. DYMOTT was 1st; and Mr. C. HOSEY, 2nd.

Miscellaneous plants arranged for effect made a nice display. Mr. E. WILLS, The Nurseries, Winchester Road, Southampton, won the leading prize with an effective arrangement of Crotons, Orchids, &c. Mr. T. Hall, gr. to Sir S. MONTAGUE, Bart., South Stoneham House, Southampton, was 2nd.

Cut Flowers.—The principal class was for twelve Japanese varieties, three blooms of each variety, arranged in vases. Mr. G. Hall, gr. to Dowager Lady ASHBURTON, Melchet Court, Romsey, was the leading prize-taker, with excellent examples of Bessie Godfrey, Madame Paolo Radaelli, Madame C. Nagelmacker, Mrs. J. Dunn, W. E. Etherington, &c. Mr. B. Hollis, gr. to Major F. CHICHESTER, Embley Park, Romsey, was 2nd.

Mr. C. HALL also won in the class for two white-flowered varieties, three blooms of each variety, to be staged in vases.

For two vases of any other colour than white Mr. HALL won with the varieties F. S. Vallis and Bessie Godfrey.

The class for eighteen Japanese Chrysanthemums, open only to gentlemen's gardeners, produced strong competition. Mr. H. Pearce, gr. to Mrs. TARGETT, Awbridge Danes, Romsey, won the 1st place. Mr. A. J. Marsh, gr. to M. HOBGSON, Esq., Morton House, Kingsworthy, was 2nd.

Mr. G. Ellwood, gr. to W. H. MYERS, Esq., M.P., Swannore House, Bishops Waltham, won the leading

place for two vases of single-flowered varieties arranged for effect.

Incurved blooms were not extensively shown. Mr. A. J. MARSH was awarded the 1st prize in the class for twelve examples. Bouquets were shown by Messrs. PERKINS & SONS, Coventry.

Mr. ELLWOOD secured the principal prize for table decorations, for a table decoration of single-flowered Chrysanthemum "Mary Anderson," and suitable relief.

Messrs. B. LADHAMS, Shirley, showed hardy flowers and Chrysanthemums. Mr. P. H. COUSENS, Swanwick, had a large collection of Apples highly coloured. There were several exhibits of fruit and of vegetables.

CARDIFF AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 2, 3.—The Cardiff Chrysanthemum Society held its eighteenth annual show on the above dates, in the Park Hall, Cardiff.

Unfortunately, the Society's efforts at further development are now greatly hampered, if not made quite impossible, on account of the very limited room at its disposal in the hall where the show has heretofore taken place. The owners of the adjacent Drill Hall would be helping a very deserving Society, and at the same time conferring a great boon upon the general public, by allowing the Chrysanthemum Society to have the use of their hall for two days each year.

The show this season was a record one, as there were twenty-five more entries than in any former year; and what so far has been a unique experience in the history of the Society is the fact that every entry promised was staged. The quality, both in size and substance, of the flowers shown in nearly every class was remarkably fine. Indeed so striking was the size of the blooms, that looking around the show one was tempted, however heretical it may seem, to question if the striving after large blooms has not gone too far.

CHRYSANTHEMUMS.

Mr. GEO. DRAKE, Nurseryman, Cardiff, was awarded the 1st prize and a Silver Challenge Cup for a stand of eight distinct varieties, three blooms of each. Among some of the best varieties shown were Henry Perkins (good colour), Bessie Godfrey, Mme. Paola Radaelli, Mrs. J. Lewis, Mrs. Barkley, and an extra large flower of Mrs. F. W. Vallis. Mrs. WILLIAMS, Bryn Glas, Newport Mon. (gr., Mr. J. Duff), was 2nd, with, among other varieties, some very fine blooms of W. R. Church, Mr. Louis Remy, and Mr. F. S. Vallis.

Mr. DRAKE was also successful in carrying off the 1st prize for a collection of twenty-four incurved blooms, the varieties of outstanding merit being J. W. Bryce, Souvenir de W. Clibran, Charles Curtis, Mrs. Crooks, Duchess of Fife, and Mrs. F. Judson. H.S.H. Prince HATZFELDT, Chippenham (gr. Mr. F. Bible), was 2nd with a box of rather coarser and more uneven blooms, the two most striking varieties being Fred. Palmer and Mrs. Judson.

For twelve blooms of Japanese varieties Mrs. WILLIAMS, Bryn Glas, took 1st place, some of the best flowers being Mrs. Emmerton, Mrs. Mease, Nellie Pockett, and the well-known Madame Carnot.

PLANTS.

Mr. G. WILLIAMS, of Cardiff, secured the 1st prize and a Silver Cup for a group of Chrysanthemums arranged in a space of 60 square feet. In this class Mr. W. TRESEDER, Nurseryman, Cardiff, was placed 2nd; while for four bush plants (distinct varieties) he was awarded the 1st prize.

AMATEURS.

In the amateurs and private gardeners' division, F. HILL, Esq., Cardiff, took the premier position for a collection of twelve cut blooms (Japanese), three of the best of these being F. S. Vallis, Bessie Godfrey, and W. R. Church. C. S. ARTHUR, Esq., Cardiff, was 2nd, with bright but smaller flowers.

In the collection for twenty-four blooms, Japanese, the best exhibit—staged by F. HILL, Esq.—was disqualified, as only sixteen varieties were shown instead of eighteen, as specified. Under these circumstances the 1st prize and a Silver Cup were awarded to a much inferior exhibit from H. A. ALLEN, Esq., of Penarth.

Prince HATZFELDT won the 1st prize for twelve incurved blooms, which, although not so fresh as those placed 2nd and shown by Sir A. HENDERSON, were better in form and substance.

One exhibit of twelve Japanese blooms brought in the owner (F. HILL, Esq.), no fewer than four awards, for in addition to receiving the 1st prize and a Silver Cup one of the blooms—F. S. Vallis—secured the prize offered for the best bloom in the show, while a flower of Bessie Godfrey received the award for being the best of that variety shown. The same exhibitor achieved further successes by winning the 1st prize for a stand of five blooms, Japanese, any one variety, and

also for a stand of twelve blooms composed of any four varieties and arranged with their own foliage.

For eighteen blooms consisting of six distinct varieties, Miss TALBOT, Margam (gr., Mr. Milner), obtained 1st, and Dr. LYNN THOMAS, Cardiff, 2nd place.

Single varieties of Chrysanthemums were well represented, and some of the best examples were shown by Dr. WALLACE, Cardiff (gr., Mr. T. Bindon), who took 1st prize for six bunches of single flowers, 1st prize for a vase of singles, and 1st for one naturally-grown plant of any single-flowered variety; Ewan Cameron, F. W. Forbes, Miss Rose, and Victoria were a few of the best sorts shown. Dr. WALLACE also took 1st prizes for the following—Two plants dwarf-trained Japanese (Mildred Ware and Mr. G. Lewis); two plants dwarf-trained incurved, and the best naturally-grown plant not disbudded in any way, and growing in a pot not exceeding 12 inches.

In a competition open to gentlemen's gardeners and amateurs, a cottager, Mr. JAMES EDGINGTON, Cardiff, was awarded a 1st prize and a Silver Cup for a remarkably fine group of Chrysanthemum plants growing in 6-inch pots, and occupying a space of 50 square feet. Mr. J. TOZERS, Cardiff, another cottager, put up a fine group of plants in an area of 32 square feet, for which he received the 1st prize.

FRUIT.

The number of entries in the fruit competition must have given the Committee much satisfaction. For the best dish of dessert Apples there were no fewer than twenty-four entries, while in that for a collection of fruit there were eighteen in one competition and sixteen in another.

For a collection of five dishes of distinct fruits, H. PITT, Esq., took 1st prize with Muscat Grapes, Pears, Apples, Peaches, and Melons.

Messrs. J. BASHAM & SON, Bassaleg, Newport, were placed 1st for a collection of six dishes of culinary Apples.

Col. C. T. WALLIS, Newport (gr. Mr. D. Powell), took 1st prize for six dishes of Apples, four of which were culinary varieties and two dessert.

Major-General LEE, Dinas Powis, was placed 1st for a dish of twelve culinary Apples and 1st for the same number of Pears. No fewer than fifteen dishes were staged in this class, the variety obtaining 1st prize being Doyenné du Comice.

TRADE EXHIBITS.

Mr. W. TRESEDER, Cardiff, showed some beautiful Dahlias and a collection of fine Tea Rose blooms grown outside, which were a striking illustration of the remarkable autumn of 1904.

Messrs. J. BASHAM & SON, Newport, put up a stand upon which examples of all the best kinds of Apples and Pears suitable to the neighbourhood were tastefully arranged, and Messrs. CLIRANS, Altrincham, showed a collection of all the newest varieties of single-flowered Chrysanthemums. P.

CAMBRIDGE AUTUMN EXHIBITION.

NOVEMBER 2 and 3.—The most satisfactory and successful autumn show ever held in Cambridge was that opened in the Corn Exchange on Wednesday, Nov. 2. Chrysanthemums, both as specimen plants and as cut flowers, were better represented than usual, while the display of Apples was extraordinary. In some of the classes for these fruits there were twenty-one competitors, and the exhibits were of such even quality that judging was an onerous task. Pears were also well shown, though in smaller numbers; and collections of vegetables constituted another important feature of the exhibition.

The principal class for cut blooms was that for thirty-six Japanese Chrysanthemums, distinct varieties, in which Mr. G. Barker, gr. to Miss M. W. GIBSON, was a good 1st with handsome blooms. Mr. HARRISON, gr. to Col. ARCHER HOUBLON, Hallingbury Place, Bishops Stortford, and Mr. Lockie, gr. to A. J. THORNHILL, Esq., Diddington Hall, were 2nd and 3rd respectively.

With twenty-four Japanese varieties, Mr. J. Parker, gr. to W. P. NEAL, Esq., Cherry Hinton Hall, took premier honours; and a similar position was taken by Mr. H. Edwards, gr. to Dr. H. BOND, Cambridge, for twelve Japanese flowers.

In the incurved bloom classes Messrs. LOCKIE, TODD, and WALKER were the most successful exhibitors.

The vases of Chrysanthemum blooms formed a striking feature, and created keen competition.

In the Apple classes, Mr. Warren, gr. to W. K. VAWSER, Esq., Cambridge, took the lead with twelve dishes. Mr. Aldenham, gr. to C. R. W. ADRIANE, Esq., Iabraham Hall, was 1st for six varieties; while Mr. C. TERRY, Papworth Hall Gardens, led with three dishes of dessert varieties. Other successful exhibitors of Apples and Pears were Messrs. RIDGEWELL, HOWARD, WALKER, and BURKITT. Grapes were moderately represented, but vegetables in the classes for collections were excellent. R. L. C.

WEYBRIDGE CHRYSANTHEMUM.

NOVEMBER 3.—The annual exhibition of this Society was held in the Village Hall on the above date, a good display of cut flowers, plants, &c., being staged. Eighteen classes were provided for cut blooms, the principal one being for twelve Japanese Chrysanthemums of distinct varieties, for which a handsome Silver Cup was given. Seven competitors entered, resulting in a good display. Mr. J. Lock, gr. to Sir C. SWINFEN-EADY, won the 1st prize with excellent examples of the varieties F. S. Vallis, Mrs. Mileham, Duchess of Sutherland, Undine, Madame C. Nagelmacher, W. A. Etherington, Henry Perkins, Mrs. F. W. Vallis, &c.

In the vase class for twelve varieties, with three blooms of each varieties, Mr. Buckmaster, gr. to F. W. SMITH, Esq., was awarded 1st prize.

Mr. LOCK was again successful in the class for eighteen Japanese, and also with a dozen incurved varieties.

In the class for six incurveds, one variety, Mr. STEVENSON was placed 1st with the variety C. H. Curtis.

A collection of cut blooms with any kind of foliage, to be arranged in a tray, proved an interesting class. Mr. LOCK was an easy 1st.

The class for single-flowered varieties was well represented, Mr. Pagram, gr. to J. COURTENAY, Esq., Weybridge, was 1st with the varieties Eureka, Edith Pagram, Mrs. Walton, Grace, and Elsie Neville.

Mr. CARTER had the best Pompons.

Amateurs showed remarkably well in their classes. Mr. F. WHEATLEY, Thames Street, Weybridge, was 1st for twelve Japanese. E. M.

TORQUAY DISTRICT GARDENERS.

NOVEMBER 3.—This show was held at the Bath Saloons, Torquay. The Torquay District Gardeners' Association, who have managed the flower-shows held in the town since the break-up of the Horticultural Society, is in a far more flourishing condition financially than was the case three years ago, when, owing to lack of support, it was unable to offer prizes at the November show. Now, circumstances enable the Association to offer good prizes, which produced keen competition in the majority of the classes, all of which were well filled except that for a group of miscellaneous plants, which attracted no entries. The spacious hall, filled with groups of Chrysanthemums, specimen plants, cut blooms, table decorations, baskets, vases, and epergnes of flowers, conservatory plants and nurserymen's exhibits, made a very pretty picture, and one that was so fully appreciated by the public that locomotion in the afternoon was a matter of difficulty. We would suggest to the executive that, in the future, a rule in general use among horticultural societies holding shows, providing for the correct labelling of exhibits be added to the bye-laws. At present, exhibitors are careless in labelling their entries. In the show under review at least two 1st prize collections were without labels, an annoying fact to visitors anxious to take notes of the winning varieties.

Cut Blooms.—For twenty-four Japanese blooms, the 1st prize was won by Mr. J. R. GULSON with a very good stand, in which Princess Alice de Monaco, Sensation, Mrs. Barkley, W. Duckman, and F. S. Vallis were especially noteworthy. 2nd, General Sir REGINALD POLE-CAREW with W. R. Church, very fine. 3rd, Mr. J. N. WHITEHEAD.

The 1st prize and certificate of the National Chrysanthemum Society, offered for twelve Japanese blooms, was won by Mrs. BARTHOLOMEW, whose specimens of F. S. Vallis and Madame Nagelmacker were particularly fine. 2nd, Rev. W. P. ALFORD. 3rd, Mr. J. QUICK.

The best six Japanese blooms (white) was shown by Mr. J. N. WHITEHEAD, who had "Mrs. J. Lewis." 2nd, Colonel CARY, with Elsie Fulton, which many thought should have received the premier award.

The best yellow Japanese was F. S. Vallis, shown by General Sir REGINALD POLE-CAREW.

For six Japanese blooms of any other colour the Rev. W. P. ALFORD won 1st prize with W. R. Church.

For twelve Japanese incurved, the 1st prize was won by Mr. J. R. GULSON. 2nd, Mr. J. N. WHITEHEAD.

In the class for a group of Chrysanthemum plants the 1st prize and Certificate of the National Chrysanthemum Society was won by Mr. H. D. HOOPER. 2nd, Captain TOTTENHAM. 3rd, Colonel GARDNER. This by some was thought to be the best in the class.

Three Specimen Chrysanthemums.—1st prize and Silver Medal of the National Chrysanthemum Society, Captain TOTTENHAM, with perfect plants. 2nd, Colonel GARDNER.

There were many entries for arrangements in epergnes, vases, and baskets, the chief fault in which was overcrowding. Of the six entries for table-decoration, the 1st prize (Mr. G. EMMETT), in which sprays of bronze Chrysanthemums and Tropaeolum tuberosum were arranged with seeding grasses, Asparagus tenuissimus, and Maidenhair Fern, was very graceful and good in colour.

Several classes were also provided for greenhouse and table plants.

The Silver Cup presented to the winner of the greatest number of points in the vegetable classes was won by Mrs. LAMBSHEAD.

NON-COMPETITIVE EXHIBITS.

In nurserymen's exhibits, Messrs. R. VEITCH & SONS, Exeter, staged Violets in variety, a collection of Bouvardias, *Amaryllis Belladonna speciosa purpurea*, and other plants. THE DEVON ROSERY Co. supplied a large number of cut Roses from their well-known nursery at Torquay, also pot-plants of the Michaelmas Daisy, *Aster grandiflorus*, a fine subject for conservatory decoration in the colder districts, was also staged, as were Chrysanthemums, &c.

Messrs. W. B. SMALE & SON, Torquay, had a representative collection of the best Cactus Dahlias, Anthuriums, the variegated *Dracenas*, *D. Dallieri* and *D. Doucetti*, *Lobelia tenuior*, and Chrysanthemum blooms.

Messrs. G. H. PEARCE & SONS, Torquay, showed some particularly fine Apples; and Mr. J. HEATH, Kingskerswell, had a table of Violets. Mr. W. H. ALLWARD, Torquay, displayed a bright stand of greenhouse plants.

WINDSOR CHRYSANTHEMUM.

NOVEMBER 4.—The autumn show was held in the Albert Institute on the above date. Entries were numerous, and the exhibits were of a high order of merit. The classes for cut blooms attracted much attention. For the Challenge Cup offered for twelve Japanese Chrysanthemums and for as many incurved varieties, distinct, there were three exhibits.

The premier award was given to Mr. Lane, gr. to Miss RIDGE, Englefield Green, who had heavy Japanese and fairly good incurved flowers. Mr. J. Minty, gr. to Sir D. GOOCH, Clewer Park, Windsor, was 2nd.

For eighteen Japanese varieties arranged with Ferns, Palms, &c., Mr. Heaver, gr. to Miss GOODLAKE, Denham, was 1st for the superior quality of his flowers, which were however badly arranged. Mr. LANE followed closely.

The last-named exhibitor won for two dozen incurved flowers in eighteen varieties, with neat but not large examples. Mr. LANE also won in the class for six flowers of any one named variety, with C. H. Curtis.

In a similar class for Japanese varieties Mr. Elkington, gr. to OWEN TUDOR, Esq., Old Windsor, was 1st, with very fine examples of "Bessie Godfrey."

Only two groups of Chrysanthemum plants were staged, but they were remarkably good in quality, the plants being dwarf, well-flowered, and not crowded. Mr. W. Cole, gr. to Miss E. B. FOSTER, Clewer Manor, was 1st; and Mr. J. MINTY, 2nd.

Miscellaneous plants arranged for effect were most meritorious. Mr. LANE won premier place with Orchids, Palms, &c. Mr. MINTY had the 2nd prize.

Prizes were offered for twelve Japanese Chrysanthemums arranged in a vase or basket with any natural foliage. In this Mr. HEARN was successful, with handsome blooms well displayed.

Mrs. ANDREWS, Windsor, had the best vase of blooms suitable for a dinner-table.

Mr. W. JINKS had the best eighteen Japanese varieties in six vases.

BATTERSEA AMATEUR CHRYSANTHEMUM.

NOVEMBER 4, 5.—The annual exhibition of the Battersea, Clapham, and Wandsworth Amateur Chrysanthemum Society was held in the Town Hall on the above dates, when a very pretty display was made, although it was not so extensive as that of last year.

The best groups of Chrysanthemums in pots were shown by Mr. HERMANN KLOSS and Mr. L. STRINGER, both of whom won 1st prizes. The best cut blooms came from Roehampton, being shown by Mr. A. SMITH, of the Convent Gardens. His collection of eighteen blooms was awarded the 1st prize. Mr. W. FORTH, 40, Westover Road, Wandsworth; Mr. J. Underwood, Chipstead, Surrey; and Mr. C. Payne, gr. to C. J. WHITTINGHAM, Sandhills, Betchworth, won 1st prizes for twelve Japanese blooms in different sections; and Mr. J. J. GREEN, Norbiton, had a nice collection of six Japanese blooms, distinct. The best group of miscellaneous plants was shown by Mr. R. Bradford, gr. to C. H. BROWN, Esq., Highwood, Roehampton. Mr. R. NEAL, The Nurseries, Wandsworth, exhibited a non-competitive group of Chrysanthemums and other plants.

DULWICH CHRYSANTHEMUM

NOVEMBER 8, 9.—This was held at the Baths, Dulwich, and resulted in a very successful and pleasing display. Groups of plants are always a feature at this exhibition, and this season about twenty excellent groups were staged. The vase classes are another strong feature, and in these there was keen competition, most of the exhibits being of excellent quality.

In floral arrangements some good exhibits were noticed. Almost all the exhibits are grown within a radius of 3 miles, and within the reach of the London fogs.

The trade exhibits were confined to Messrs. PEED & SON, Norwood, who put up a very good group of plants and cut blooms; and to Mr. NORMAN DAVIS, who had a good exhibit of large Japanese blooms. Mr. R. FOSTER displayed a group of pot plants.

The large hall was well filled, and the arrangements well carried out.

BIRMINGHAM & MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT, AND HORTICULTURAL.

NOVEMBER 8, 9, 10.

The biggest Autumn Show ever held in Birmingham.

The forty-fourth annual exhibition of this Society was held in the Bingley Hall, Birmingham, on the above dates, and for all-round excellence, variety and quantity of exhibits surpassed all its predecessors, the great building, covering about an acre of ground, being severely taxed in order to conveniently accommodate the whole of the exhibits.

The number of exhibitors was 115, and the entries exceeded those received last year by about 200, which must be very gratifying to the Committee, which is largely composed of working gardeners.

The Birmingham Chrysanthemum Society is the principal one of its kind in the Midlands, and on this occasion £450 were offered in prizes.

Owing to the great heat of the late summer, following a genial spring, Apples were largely shown, but many varieties were below the average size, and, strange to say, indifferently coloured. Pears were not over-plentiful, but the groups of miscellaneous flowering plants and floral decorations from honorary exhibitors were unusually numerous and showed high culture, as well as artistic skill in arrangement. As usual, vegetables were quite a feature.

We observed a marked improvement in the arrangements compared with those of a year ago. For instance, the Japanese blooms in the big vase class were placed in two rows on low step-staging, which added greatly to the effect of the flowers. Another innovation deserving of special mention was the introduction of suitable cards with the number of the classes printed in large type, which made it comparatively easy to find any class or classes of special interest.

The staging arrangements, under the personal supervision of Mr. H. A. Burberry, gave general satisfaction.

CHRYSANTHEMUMS.

The premier prize, consisting of £10 and a magnificent Silver Challenge Cup (the latter given by G. Cadbury, Esq., Northfield), for a group of plants arranged for effect, was won by J. WHITFIELD, Esq., Forest Row, Moseley (gr. Mr. W. Thomson), with a wonderfully fine exhibit, composed largely of Japanese varieties, relieved with foliage plants. 2nd, Messrs. SANDFORD & CO., Hall Green, Birmingham. 3rd, J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer).

For a similar group, but occupying less space than the above, A. H. GRIFFITHS, Esq., Woodburne Road, Edgbaston (gr. Mr. C. Kelland), was placed 1st; A. CLARK, Esq., Hagley Road, Edgbaston (gr. Mr. J. Easom), 2nd; and L. E. LLOYD, Esq., Moseley (gr. Mr. T. Bird), 3rd.

SPECIMEN PLANTS.

For nine large-flowering varieties (Japanese excluded), dissimilar varieties; six large-flowering varieties (Japanese excluded), dissimilar varieties; and six Japanese varieties, dissimilar varieties, E. MARTINEAU, Esq., Edgbaston (gr. Mr. O. Brasier), and J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), were placed 1st and 2nd respectively.

The same exhibitors were again placed in the same order for one large-flowering variety (Japanese excluded) and one Japanese variety.

CUT BLOOMS (JAPANESE).

The principal feature in the cut bloom classes was centred in the one for eight distinct varieties, five blooms of each, cut with stems not less than 18 inches long; six exhibitors entered, and after a close contest Lieut.-Col. BEECH, Coventry (gr. Mr. E. J. Brooks), was placed 1st. His collection contained superb blooms of Henry Perkins, Bessie Godfrey, and Madame J. Radaelli. 2nd, the Dowager Lady HINDLIP, Hudson Manor, Droitwich (gr. Mr. C. Crooks). 3rd, H. O. LORD, Esq., Charlton Kings (gr. Mr. F. May). And for six Japanese varieties, five blooms of each, the prizes went in exactly the same order as above.

For four distinct Japanese varieties, the Dowager Lady HINDLIP was 1st; and the LEAMINGTON NURSERYMEN, Leamington Spa, 2nd. The Dowager Lady HINDLIP also received the 1st award for two distinct Japanese varieties; and Mr. T. M. TRANTER, of Solihull, 2nd prize.

For the best vase of any white Japanese variety, The LEAMINGTON NURSERYMEN took premier award; and the Dowager Lady HINDLIP, 2nd.

For the best yellow variety (Japanese), the Dowager Lady HINDLIP was awarded the 1st position.

INCURVEDS.

For eighteen blooms, distinct, Lieut.-Col. BEECH (gr. Mr. E. J. Brooks), was 1st; and F. J. MYERS, Esq., Banbury (gr. Mr. J. N. Bush), 2nd.

For twelve varieties the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), was 1st; and Sir A. HENDERSON, M.P. (gr. Mr. J. Bastin), 2nd.

THE FLOWER AND FRUIT COMPANY, Frome, won the 1st prize for twelve Japanese incurved varieties; and the LEAMINGTON NURSERYMEN, Ltd., the 2nd.

MISCELLANEOUS PLANTS AND FLOWERS (OPEN).

The 1st prize for twelve Cyclamen went to the Rev. H. BUCKSTON, Derby (gr. Mr. A. Shambrook). 2nd, J. A. KENRICK, Esq. (gr. Mr. A. Cryer). The last-named was awarded 1st prize for six Fern-leaved Primulas, his plants carrying large trusses of flowers.

For six single Chinese Primulas Messrs. CHILD & HERBERT, Acobs Green, were easily 1st; Messrs. THOMPSON & SONS, Sparkhill, 2nd; whilst J. A. KENRICK, Esq. (gr. Mr. A. Cryer), was 3rd.

In the classes for twelve and six Primulas (single varieties), open only to amateurs, J. A. KENRICK, Esq., was 1st in each case with nicely-flowered specimens; and in the class for six Cyclamen, the Rev. H. BUCKSTON, Derby (gr. Mr. A. Shambrook), beat the other competitor, J. A. KENRICK, Esq.

There was a spirited competition in the class for a decorated dinner-table, as fifteen tables were examined by the judges, who awarded the 1st prize to C. A. PALMER, Esq., Handsworth (gr. Mr. C. Thomas); 2nd, to Miss WOOLMAN, Tysley; and the 3rd to THE LEAMINGTON NURSERYMEN, Ltd. It was remarkable that little other colour besides shades of yellow and orange was used on any of the tables.

FRUIT.

The first prize of £7 for the best collection of British grown fruit to occupy a space not exceeding 40 square feet, was won by Lady BYRON, Thrumpton Hall, Derby (gr. Mr. H. Weeks), with beautiful examples of Lady Hutt, Alicante, Mrs. Pearson and Lady Downe's Grapes. The other fruit consisted of Apples and Pears. 2nd, Earl of CARNARVON, Brethby Park, Burton-on-Trent (gr. Mr. J. Read). 3rd, W. MAYNARD, Esq., Ledbury (gr. Mr. W. E. Hyde), whose collection was much more representative than either of the other two, but it lacked quality and was very badly arranged.

Six Bunches of Grapes of not fewer than 3 varieties (Open).—1st, Earl of HARRINGTON (gr. Mr. J. H. Goodacre), with shapely well finished bunches of Muscat of Alexandria (4), Black Alicante (1), and Gros Maroc (1). 2nd, Mrs. F. NEED, Great Malvern (gr. Mr. J. Jones). 3rd, Lord BAGOT, Rugeley (gr. Mr. J. Bannerman). There were four entries.

In the class for three bunches of Black Grapes there were five competitors. 1st, Lord BAGOT (gr. Mr. J. Bannerman). 2nd, Mrs. F. NEED.

For three bunches of Muscat Grapes, the Earl of HARRINGTON was placed 1st; and MARK FIRTH, Esq., Leicester (gr. Mr. F. J. Clark), 2nd.

The six best dessert varieties of Apples, six fruits to a dish, came from Col. ARCHER HOUBLON, Welford Park, Newbury (gr. Mr. C. Ross), who holds perhaps the unique record of having won the 1st prize with varieties raised by the exhibitor. The varieties shown were The Houblon, Charles Ross, Mrs. Phillimore, Paroque, Berks Pearmain, and Rival. 2nd, W. WALDRON, Esq., Kingswinton (gr. Mr. H. Wright).

E. W. CADDICK, Esq., Ross (gr. Mr. Rose), staged the best six culinary Apples. W. WILLIAMS, Esq., Wolverhampton (gr. Mr. S. Postings), had the best eight dishes of Pears. The Dowager Lady HINDLIP obtained the 1st position for four dishes of Pears.

VEGETABLES.

In a class for a collection of nine distinct kinds, in which prizes were offered by Messrs. Sutton & Sons, Reading, Lord ALDENHAM, Aldenham House, Elstree, Herts (gr. Mr. E. Beckett), was 1st; and P. SOUTHEY, Esq., Bampton (gr. Mr. G. Neal), 2nd.

For a collection of eight distinct kinds, for which prizes were offered by Messrs. Webb & Sons, Stourbridge, the Right Hon. T. F. HALSEY, Hemel Hempstead (gr. Mr. H. Folkes), was 1st; and Sir A. HENDERSON, M.P. (gr. Mr. W. L. Bastin), 2nd.

Collection of nine distinct kinds, prizes offered by Messrs. R. Smith & Co., Worcester, 1st, the Right Hon. T. F. HALSEY (gr. Mr. H. Folkes). 2nd, W. WALDRON, Esq. (gr. Mr. H. Wright).

Collection of nine distinct varieties, prizes offered by Messrs. Hewitt & Co., Solihull, 1st, W. C. ALSTON, Esq., Elmdon (gr. Mr. C. Haynes). 2nd, J. A. WATSON, Esq., Knowle (gr. Mr. A. Cornhill).

The Right Hon. T. F. HALSEY won the Silver Challenge Bowl offered by Mr. R. Sydenham, Birmingham, for having secured the greatest number of points in certain classes. The Silver Challenge Bowl, open only to gardeners and amateurs resident within 6 miles of Birmingham, was gained by Mrs. W. A. MARRIAN, Olton (gr. Mr. T. Griffiths).

NON-COMPETITIVE GROUPS.

A Gold Medal was awarded to Messrs. JOHN WATERER & SONS, American Nursery, Bagshot, Surrey, for a group consisting of variegated Hollies in standard and bush forms, well-berried Skimmias, and highly-coloured Conifers.

Another group similar to but not so bright in colour came from Messrs. HEWITT & CO., Solihull, Birmingham. The same firm also contributed a nice collection of cut Carnations, arranged in large vases (Silver-gilt Medal).

Messrs. CHILD & HERBERT, Acocks Green, Birmingham, had over 100 bunches of decorative Chrysanthemums, and a collection of Conifers, together with a large plant of *Euonymus europæus*, carrying an abundance of brilliant-coloured capsules and berries (Silver-gilt Medal).

Mr. J. H. WHITE, nurseryman, Worcester, sent a group of Conifers, Japanese Acers (beautifully coloured), indoor flowering plants, and a large collection of Apples (Gold Medal).

THE VINERIES, Ltd., Acocks Green, Birmingham, set up an imposing group of decorative Chrysanthemums in pots (Gold Medal).

Mr. T. C. RIVERS, Harrison Road Nursery, Edgbaston, sent hardy shrubs (Bronze Medal).

Mr. JOHN BASHAM, Fair Oak Nurseries, Bassaleg, contributed 130 dishes of large shapely Apples and Pears, but not very well coloured (Gold Medal).

Messrs. PEWTERESS BROS., Tillington, Hereford, also received a Gold Medal for a collection of highly-coloured but rather small Apples.

From the Rt. Hon. JOSEPH CHAMBERLAIN, M.P., Highbury Moor Green (gr., Mr. J. Deacon), came an extensive group of flowering and foliage plants, amongst which were good examples of Begonias, Acalyphas, and Eucharis (Gold Medal).

Messrs. J. PEED & SON, West Norwood, London, staged a collection of cooking and dessert Apples and a few Pears (Silver-gilt Medal).

From THE KING'S ACRE NURSERY CO., Hereford, came a representative collection of beautiful Apples (Gold Medal).

Messrs. BICK BROS., Olton, contributed an interesting collection of Saxifragas, Sempervivums, &c. (Silver Medal).

A similar award was made to Messrs. CLIBBON & SON, Altrincham, for a large display of single Chrysanthemums.

Messrs. THOMSON, The Nurseries, Sparkhill, set up a small well-grown collection of vegetables and a large group of indoor flowering and foliage plants (Silver-gilt Medal).

Messrs. WELLS & CO., Earlswood, Redhill, exhibited uncommon varieties of cut Chrysanthemums (Silver Medal).

Messrs. R. SMITH & CO., Worcester, showed a large collection of Apples and a group of showy Conifers.

"BAKERS," Codsall, Wolverhampton, staged a collection of Potatoes, including many new varieties (Gold Medal).

Mr. JAMES BUDD, Love Lane Nurseries, Solihull, sent forty dishes of rather small, poorly-coloured Apples.

From the LADY WARWICK COLLEGE, Studley Castle, Warwickshire, came a large collection of bottled fruits and jellies (Silver Medal).

Messrs. GUNN & SONS, Olton, made a large and effective display with decorative Chrysanthemums and floral decorations (Gold Medal).

From Messrs. POPE & SONS, King's Norton, came a beautiful chaplet composed of Lilies, Stephanotis, Richardias, and Cattleyas, over a groundwork of green and yellow Laurel leaves (Silver Medal).

The finest group of cut Chrysanthemums came from Mr. W. J. GODFREY, Exmouth. He also showed zonal Pelargoniums and Carnations (Gold Medal).

A Gold Medal was also awarded to Messrs. PERKINS, Coventry, for floral decorations.

Messrs. W. B. ROWE & CO., Barbourne Nurseries, Worcester, sent a collection of richly-coloured Apples, also Pears (Silver-gilt Medal).

Messrs. WEBB & SONS, Stourbridge, showed Potatoes and Begonias (Silver-gilt Medal).

THE LEAMINGTON NURSERYMEN AND FLORISTS, Leamington Spa, had a grand lot of hardy shrubs, but, unfortunately, little taste was shown in the arrangement of them (Silver Medal).

Vegetables were well shown by Messrs. YATES & SONS, Old Square, Birmingham (Silver-gilt Medal).

Mr. W. SYDENHAM, Tamworth, exhibited decorative Chrysanthemums (Silver Medal).

An interesting and instructive collection of Apples came from Mr. J. UDALL, Experimental Gardens, Droitwich. Chrysanthemums were also shown (Silver Medal).

Messrs. AMBROSE & SON, Cheshunt, Herts, exhibited cut flowers and examples of the new Grape, Melton Constable (Silver Medal).

Bronze Medals were awarded to Mr. R. SYDENHAM, Tenby Street, Birmingham, for an arrangement of cut flowers; Messrs. J. M. JOHNSON, Four Oaks, for decorative Chrysanthemums; and to Mr. T. C. RIVERS, Edgbaston, for hardy shrubs.

ROYAL BOTANIC.

NOVEMBER 9.—The last of this Society's exhibitions for the season was held at Regent's Park on the above date in very adverse weather. The conservatory and corridors were very bright with a display of Chrysanthemum flowers in addition to the few exhibits staged by exhibitors. The general order and appearance of the glass-houses reflected credit on the Superintendent, who had a most noteworthy display of the seasonable Chrysanthemum throughout the houses; indeed, as many as 5,000 plants were in flower of all types, including Japanese, Incurred, Pompons, Singles, &c. The "single" Ladysmith was especially in evidence, and a charming vase of this variety, 9 feet in diameter, draped with Asparagus Sprengeri, was especially pleasing. We also noticed the varieties Mrs. Emma J. Fox (claret-rose with golden reverse), Mrs. Greenfield (an excellent yellow-coloured Japanese), Miss Alice Byron, Mrs. Barkley (excellent flowers of this recurved Japanese type), Wallace E. Vowden, &c. Among the plants in the conservatory, Agave dasylirioides was in flower, having a spike 5 or more feet in length.

Messrs. J. AMBROSE & SON, nurserymen, Cheshunt, Herts, who obtained a Gold Medal, staged a collection of miscellaneous plants, Chrysanthemums, Liliums, Astilbe (Spirea), Lily of the Valley, Tuberoses, &c., arranging plants of Cyclamen persicum toward the front, with an edging of small Ferns. Several really excellent flowers of varieties of Carnations were included, Vulcan being an excellent scarlet variety of this popular flower. Messrs. AMBROSE also staged pot plants and bunches of fruit of their new Grape Melton Constable, for which they were awarded a Certificate of Merit.

Messrs. T. S. WARE & CO., Ltd., Feltham, Middlesex, staged an extensive group of hardy flowers, alpine plants, Chrysanthemums, &c. *Primula capitata* was shown in flower, also *Lithospermum prostratum*, and *Cyclamen repandum*; *Iris stylosa* was shown well, also perennial Asters, Phlox, Lupinus, Helleborus, Scabiosus, &c. The Chrysanthemums were chiefly of the decorative type (Large Silver-gilt Medal).

The ROYAL BOTANIC SOCIETY staged a number of economic plants—*Sanseveria cylindrica*, with examples of fibres and fabrics woven from them; *Coffea arabica*, the coffee; *Smilax Sarsaparilla*, which produces sarsaparilla of commerce; the Lequat, *Boehmeria nivea*, which produces a useful fibre, &c.

Messrs. WOOD & SON, Wood Green, staged an ingenious apparatus for pot-washing. This machine consists of a tub with a revolving wheel turned by a handle. Suitable sized brushes are affixed, and these revolving rapidly easily cleanse the inside and outside of pots of different sizes, according to the gauge of the brushes used. This would be a handy appliance in establishments where pots are used in great numbers.

Messrs. CHAMPION & CO., 115, City Road, London, staged examples of their tubs for plants and shrubs.

GARDENERS' DEBATING SOCIETIES.

DULWICH CHRYSANTHEMUM.—The Winter Session of this Society was opened on Tuesday, October 18, with an interesting lecture on "Begonias," by Mr. R. B. Leach. The various stages of Begonia-culture, from the initial stages of seed fertilisation to the finished and dried-off tubers, were practically and minutely described, the peculiarities of the "Gloire" type noted, and the "Rex" and other branches of the genus referred to. Later papers on "Sweet Peas," "Horticulture in Canada," "Members and their Gardens," &c., are included in the programme for the Session. The Chrysanthemum exhibition will take place on November 8 and 9.

REDHILL, REIGATE AND DISTRICT GARDENERS.—This Society held a meeting on Tuesday, October 25, in St. Matthew's School, under the presidency of the Chairman, Mr. W. P. Beund, when a paper was read on "Zonal Pelargoniums and their Culture," by Mr. C. J. Salter, of The Gardens, Woodhatch Lodge, Reigate, whose skill as a cultivator is widely known. There were over one hundred members present.

KINGSTON GARDENERS.—There was a large attendance at the meeting on October 28 to witness a demonstration by Mr. W. Hayward, florist, Fife Road, Kingston, on "The Art of Wreath-making," showing how the commoner as well as the choicest flowers and foliage may be utilised for wreaths if arranged with care. J. T. B.

READING AND DISTRICT GARDENERS.—"The Naturalisation of Plants and Bulbs on Grass" was the title of a paper read by Mr. G. Stanton, of Park Place, Henley-on-Thames, before a large attendance of members. The President, Mr. Leonard Sutton, presided. Mr. Stanton in his opening remarks referred to the great and additional charm that was given to the half-kept pleasure grounds, woodland walks, and the woods and corners that abound in most gardens, by the naturalisation of plants and bulbs. It broke up the monotony of the more formal and strict bedding. The speaker credited Mr. William Robinson as having done more for this movement than any one in this country. In commencing this style of gardening, lessons should be drawn from the way some of our wild flowers cluster together in shade, partial shade, open positions, or dry or moist situations. The most suitable plants for various positions were recommended, such as coloured Primroses, Polyanthus, Violets, Foxgloves, Hellebores,

German Iris, Doronicums, Forget-Me-Nots, Yuccas, Spireas, &c. As to bulbs, much thought and care should be devoted to selecting the best and most suitable positions. Daffodils were specially recommended, and the varieties most adapted for the work were named. Other bulbs recommended were Winter Aconites, Snowdrops, Crocuses, Lily of the Valley, Snowflakes, Scillas, Grape Hyacinths, &c. Different methods of planting were explained at some length.

EGHAM AND DISTRICT GARDENERS.—The fortnightly meeting of this Society was held on November 1, Mr. W. Swan occupying the chair. A lecture entitled "Various Methods of Propagation" was given by Mr. A. Sturt. The lecturer referred to the natural and artificial methods of propagation adopted to meet the immense demands for plants, trees, shrubs, &c. In selecting the various grafts, cuttings, buds, &c., great care is needed to produce robust specimens. An interesting discussion followed the lecturer's remarks.

DORCHESTER GARDENERS.—A meeting of this Society was held on Monday. There was a large attendance of members and visitors. The President (Captain R. Dymond, of Brooklands) presided. Mr. H. C. Jefferys, Dorset County Instructor in Agriculture, gave an instructive address on "Micro-organisms that Live in the Soil." He spoke of the various kinds of micro-organisms, and of the conditions favourable to their life and propagation—moisture, warmth, &c. It was important to remember that all bacteria were not injurious, but that some were favourable. As to sterilisation, if they had a sterilised soil they could not grow much in it. They did not want to kill all bacteria, but only those which were hostile to them.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—A good attendance of members and friends assembled on Tuesday, November 1, when a lecture entitled "Birds in Our Garden" was given by Mr. P. F. Bunyard. The subject was well illustrated by a number of lantern-slides. The lecturer, in opening his subject, appealed to all gardeners, in fact to everybody who came in direct contact with birds, to study their habits, so that before passing a verdict on them they might be assured from experience whether they did good or harm. Most insectivorous birds are perhaps inclined to peck the ripe fruit; if however a few vessels of water were placed in the garden these would prove more attractive to them, and they would assuage their thirst from this source rather than by eating the fruit.

LIVERPOOL HORTICULTURAL.—The first lecture of the above Association was held on Saturday, November 5, Mr. T. Foster occupying the Chair. Mr. Charles R. Paul delivered a lecture on "Liliums in Pots and in Borders." He spoke of the best cultural methods and named many good varieties worthy of cultivation. Many coloured plates of different varieties of Liliums were exhibited, which added to the interest of the paper. In the discussion which followed, one gardener spoke of having ninety-six flowers developed from a single bulb of *Lilium auratum* in one season, the bulb being planted out-of-doors. J. P.

SCHEDULES RECEIVED.

CHESTER PAXTON SOCIETY'S ANNUAL EXHIBITION of fruits and Chrysanthemums in the Town Hall, Chester, on Wednesday and Thursday, November 16 and 17, 1904. Honorary Secretary, Mr. G. P. Miln, Grosvenor Museum, Chester.

ORCHID NOTES AND CLEANINGS.

ORCHIDS AT FAIRLAWN, PUTNEY.

THE gardens of H. S. Goodson, Esq., at West Hill, have always been liberally kept up by their owner, whose family is very fond of flowers and gardening. The glass structures have seen many changes of occupants, for while certain of them have been always retained as fruit-houses, the others have contained collections of some of the best stove and greenhouse plants, the less desirable of which were always sacrificed to make room for newer and better things.

Years ago the ornamental range of glass forming a conservatory attached to the dwelling-house was tried for Orchids, but as their numbers increased it was found expedient to rearrange some of the existing plant-houses for their better accommodation. This has been done since Mr. G. E. Day, a well-known Orchid-grower, was engaged as head-gardener, the houses being fitted with all the best appliances, and a large new span-roofed house constructed, five houses being now devoted to Orchids, and the other structures utilised for resting plants. Mr. H. S. Goodson himself has a partiality for good *Odontoglossums* and *Cattleyas*, Mrs. Goodson and Mr. H. J. Goodson favour *Cypripediums*, and Mr. H. F. Goodson prefers *Cattleyas* and *Lælias*. Withal there is an interest in pretty and curious

Orchids, which is the surest indication that the cultivation of Orchids is not a fleeting hobby.

The first house is devoted principally to rare Cattleyas and hybrids, the staging in the middle being filled with about 500 hybrid Cattleyas and Lælio-Cattleyas of flowering size, some of them in flower and more in sheath. Strong plants of Lælio-Cattleya \times Digbyana-Mossiae, and smaller ones of the newer L. Digbyana crosses were noted, as well as selections of the best forms of L.-C. \times callistoglossa, L.-C. \times bletchleyensis, L.-C. \times Canhamiana; Lælia \times Digbyana-purpurata Edward VII., Cattleya \times Iris, and other handsome favourites.

On one side is a batch of about fifty white and blush forms of Cattleya intermedia, including C. i. alba, C. i. carnea, and C. i. nivea. With them is a good example of Cattleya labiata alba, and one of the blue-tinted C. i. cerulea. On a shelf is a collection of Miltonias, and suspended overhead a lot of Cattleya aurea, C. Hardyana, and other uncommon species. Flowering with a great number of large ivory-white flowers is a large specimen of Lycaste costata, and various Cattleyas of the C. \times Mantini class give effective colouring.

As in most other collections, here is a number of seed-capsules of cross-fertilised Orchids, out of which some showy and interesting seedlings are expected.

The new, large span-roofed house is nearly filled with Odontoglossums, principally unflowered O. crispum, which have been drawn from several different importations, in hopes of securing some finely spotted forms. While the new house was in construction, the plants passed the summer in the cold Peach-house, and are none the worse for the change. Forms of Cypripedium insigne, C. \times Prospero, C. \times Actæus, and other cool-house varieties are in bloom in this house, as well as Cymbidium giganteum, Oncidium ornithorhynchum, O. varicosum, O. tigrinum, Lælia pumila, and others.

A warmer span-roofed house has a good selection of Cypripediums, C. insigne Sanderæ in bud, and C. callosum Sanderæ being remarked. On the shelf near the glass in front C. bellatulum and some of the hybrids of that section thrive well. Specially noteworthy are some very strong specimens of Cypripedium \times Morganie, which are said to bloom well and regularly; a very dark and finely-coloured Cypripedium named "The Captain," of unrecorded parentage, but probably a cross from C. \times ænanthum superbum. C. \times Pallas has beautiful ivory-white and green foliage, and many others of the healthy collection are in bloom or bud.

In the lobby is a good batch of C. Spicerianum in flower; in another house a number of Cattleya Bowringiana, several plants of the pretty Maxillaria picta, Dendrobium formosum giganteum, &c., are in bloom. In a small sunk house is another set of Cypripediums, including Selenipediums. Two very fine specimens of C. Haynaldianum and C. Sargentianum, and some smaller species are in flower.

The ornamental structure by the dwelling-house for plants in flower has a very fine show of Cattleya \times Mantini and the allied forms C. \times Mrs. J. W. Whiteley, and C. \times John Baguley, their rosy-crimson flowers with gold-veined labellums showing up well. Arranged with them were Lælio-Cattleya \times Parysatis, the delicate rose L.-C. \times Clonia Annie Leemann, Lælia \times splendens, good Cattleya Bowringiana, and C. labiata, one grand variety of which with five flowers having the size and rich rose-crimson labellum of a good C. Warnerii. Others in bloom were forms of Cypripedium insigne, C. Arthuri-anum, C. Charlesworthii, C. \times Swinburnei, C. \times tonso-superbiens, and other Cypripediums; Pleione lagenaria, Epidendrum vitellinum, and specially fine Lycaste Skinneri alba.

"A. D."

THERE are probably few signatures better known to habitual readers of these pages than that of "A. D." Mr. Alexander Dean has indeed such a prolific pen that there are few subjects connected with practical gardening on which he has not contributed valuable ideas. At one time offering a suggestion, at another time criticising, sometimes sharply, but never maliciously, something that has taken place, and always contributing usefully to any discussion, "A. D." has come to be regarded as one possessing a special right to speak for gardeners. We suspect that not infrequently his criticisms are inspired by gardeners who have made their complaints to him, knowing that they will be put before the public in a more convincing manner by him than would be the case were they to undertake the task themselves. It matters not whether the Royal Horticultural Society is going to hold a vegetable show, build a new hall,



"A. D."

acquire a garden, make a trial at Wisley, or give a lunch to the members of its Committees, the last word on these or any other matters has not been said until "A. D." has spoken! Moreover, he has rendered valuable service to ourselves and to our readers on many occasions, so that we have pleasure in presenting his photograph at a time when he is receiving congratulations upon such a satisfactory domestic event as his golden wedding, which he celebrated on November 4, in the St. James's Hall, Kingston-on-Thames, when about 200 of his friends, including some well-known horticulturists, gathered to offer him their congratulations. A very enjoyable evening was spent, which was enlivened by vocal and instrumental music.

"A. D." we may say, was literally born into gardening, as were his elder brothers. He was the youngest of four sons, having been born on March 22, 1832, and therefore is now in his seventy-third year. The place of his birth was the then extensive nursery at Hill, near Southampton, the owner of which was a famous landscape gardener, Mr. William Bridgewater Page, Mr. Dean's father being foreman at the time. Here he acquired those tastes now so strongly in evidence. Gardening eventually became his occupation, and he received his first real tuition from a clever Scotsman, John Colthart, who had come

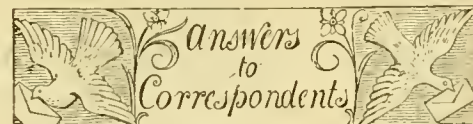
from Kirkeudbright to the south of England, where at that time Scotsmen occupied all the best positions.

After undertaking a voyage to the West Indies in 1853, Mr. Dean occupied himself for a couple of years with other employment in Surrey and in London, and then settled down to garden work again, starting in Bucks, then in Berks, then for some years at Shirley, in Hants, where he established the Shirley Horticultural Society, which still exists. Coming to Bedford, Middlesex, he took charge of Mr. R. Dean's seed-growing grounds, and remained there for twenty years.

During that long time a large number of exhibits were made at the meetings of the Royal Horticultural Society and at other shows, especially at the International Potato Exhibitions. A frequent visitor to the best gardens, and often a judge at exhibitions, "A. D." soon became a recognised authority on fruits and vegetables. For some twelve years he has been an active member of the Fruit and Vegetable Committee of the Royal Horticultural Society, and is a member of the committees of the National Dahlia and Potato Societies. For thirteen years he has been the able assistant instructor in horticulture, under Mr. John Wright, V.M.H., to the Surrey Education Committee; and his services are in great request during the winter as a lecturer, and in the summer as a judge at cottage gardens, allotments, and flower-shows in the county. When last year the great dinner for British gardeners was organised so successfully, "A. D." acted as honorary secretary, and received from his colleagues on the committee their warm thanks and a handsome testimonial as a memento.

Obituary.

JAMES HOLDEN.—The death took place, on November 3, at the Lodge, Victoria Park, Birkdale, of Mr. James Holden, aged seventy-three. Deceased was a noted cultivator of Dahlias. He was gardener and curator of the Recreation Ground for the Cheshire Lines Committee, and when the Birkdale District Council took it over, and the park was dedicated to the public in 1890, he became the servant of the District Council. He laid out the park with much taste, and had supervised it for twenty years. He was a native of West Derby.



* * **EDITOR AND PUBLISHER.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPLES: Fish. We should say that it is quite possible to have fruits of Peasgood's Nonesuch and Warner's King quite as large as those of Lord Suffield in the latter part of August and through September. From our experience of Lane's Prince Albert, we think that unless the trees were planted in a very favoured spot, the fruits could not possibly attain to any great size until the beginning of September, and then only under the best of treatment. Even with the two former varieties it would be necessary to commence thinning out the fruits and affording manure to the roots early with the object of accelerating growth. These varieties, if gathered so early, always shrivel. If you require fruits for exhibition purposes at such a date, we would suggest that Emperor

Alexander, which is always ready to gather a week before Peasgood's Nonesuch, Mrs. Barron, Jubilee, Stirling Castle, Stone's Apple, The Queen, and Twenty Ounce should be planted. All these produce very large fruits at an early date under good attention. If the trees are planted in a warm and well-drained soil, growth would be more rapid and the fruits earlier and better finished. Cold and badly-drained soils hinder growth very much.

BEGONIAS AND CYCLAMEN: Foreman. There is nothing on the leaves to show what has caused the injury. It may possibly be due to the Begonia-mite, but we have failed to discover any upon the leaves. We think you should reduce the atmospheric temperature by 5°, both during the day and at night; and, if you find it necessary to use insecticides, be careful to dilute them sufficiently.

CANADIAN GRAPES: J. M. If these are growing in the ordinary conditions of an English vinery they will need to be pruned similarly to more commonly-grown varieties.

CHRYSANTHEMUM BLOOMS DAMPING: W. L. Afford plenty of fresh air to the house, and employ a little fire-heat if necessary to dispel excessive moisture. Do not water the plants except when they really need water, and carry out this operation before noon each day. If you are still applying stimulating manures to the plants discontinue this at once. The excessive use of manure is the most frequent cause of damping in the florets.

CHRYSANTHEMUMS: P. M. R. The flowers were received in a flattened card-board box, and all that can be safely said in regard to them is that they belong to the Decorative section. You would do well to send flowers to a nurseryman, who could compare them with growing specimens; but take care to pack them in a strong box that will not be smashed in the post.

CORRECTIONS. Mignonette Thatchett, under the heading "Mixed Flower Border" on p. 317 of last issue, was a misprint for "Matchett."—*Cattleya* × *G. W. Law-Schofield*, shown by Messrs. F. Sander & Co. at the last meeting of the Royal Horticultural Society, was awarded an Award of Merit and not a Botanical Certificate.

CROQUET LAWN: Sport, Hants. A full-sized croquet-ground measures 40 yards long by 30 yards wide. Draw a line through the centre of the ground, and at 8 yards from the boundary at either end insert in the centre line a peg. At 16 yards from either end in the same line a hoop will be needed. Hoops are also necessary at the corners, and these should be inserted on a line with the pegs, 7 yards distant from each peg. In the *Calendar of Garden Operations*, obtainable from our Publishing department, price 7½d. post free, there are diagrams of tennis and croquet-lawns, which will help you to understand the instructions given above.

FUNGUS: W. W. A small Puff-ball, named *Bovista plumbea*.

GRUBS: J. R. Your insect is the grub of the Cockchafer or May-bug, *Melolontha vulgaris*. From their habit of burrowing they are extremely difficult to be got rid of. Try trapping them with Potatoes buried near their haunts. Insert the pointed end of a small flower-stake in the tuber, and bury the trap with the stake at right angles above the surface of the ground. This will indicate the position of the trap, and also serve as a handle to withdraw it. Birds should be encouraged, as they feed on this grub. When potting sterilise the soil by baking it.

HOPS AS MANURE: Rosa. All forms of vegetable matter contain more or less manurial elements, but spent Hops possess very little—not nearly so much, for instance, as fresh leaves. We do not think they would have any special value for Roses.

NAMES OF PLANTS: See note under "Names of Fruits."—J. S. 1, *Euonymus europæus*, the Spindle-tree; 2, *Ginkgo biloba*, the Maidenhair

tree; 3, *Stenotaphrum americanum*. No. 1 is in fruit, not in flower, as you suppose.—R. P. 1, *Oncidium cucullatum*; 2, *Odontoglossum Hunnewellianum*.—G. K. *Salvia Horminum*.—K. & B. 1, 2, and 3 seem to be all forms of *Tsuga Pattoniana*; Number 1 looks like the variety *Hookeriana*; 4, *Spiraea Thunbergii*; 5, *Liriodendron tulipiferum*.—J. B. N. B. A pretty nearly white form of *Cattleya labiata*, and more valuable than the common form.—J. D. *Cypripedium* × *Ashburtonia*.—Mrs. H. *Dendrobium Phalaenopsis*.—Carton. 1, *Saccolabium retusum*; 2, *Vanda Kimballiana*; 3, *Aërides odoratum*.—Hants. *Vanda Kimballiana*.—F. W. C. 1, *Arbutus Unedo*; 2, *Weigela rosea variegata*; 3, *Hibiscus Cooperi*; 4, hybrid of *Begonia semperflorens*; 5, *B. incarnata*; 6, *B. Dregei rosea*.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers, still less to casual readers, to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe.

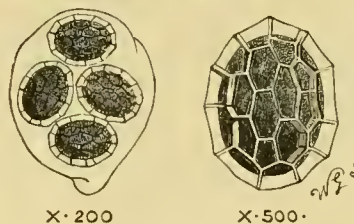
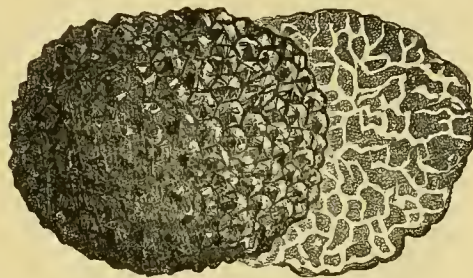


FIG. 157.—THE BRITISH TRUFFLE (*Tuber aestivum*).

specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in this issue are requested to be so good as to consult the following numbers:—*G. Barrett*, 1, Grange's Pearmain; 2, Pott's Seedling; 3, Rymer; 4, White Westling; 5, Fearn's Pippin. The Pear was decayed beyond recognition.—*T. K. & Co.* 1, Warwickshire Pippin; 2, Winter Strawberry; 3, Hollandbury; 4, Gooseberry Pippin.—*Norfolk Reader*, 1, Herefordshire Pearmain; 2, Waltham Abbey Seedling; 3, Wellington; 4, Pott's Seedling; 5, Round Winter Nonesuch; 6, Maltster.—*W. B. W.* Pear rotten, send again earlier next season.—*J. H. Francis*, 1, Whiting; 2, Adam's Pearmain; 3, Schoolmaster; 4, Annie Elizabeth; 5, a very fine specimen of Golden Russet; 6, King Edward.—*H.* 1, Hoary Morning; 2, Bismarck; 3, Melon Apple; 4, Newton Wonder; 5, Lady Henniker; 6, The Queen.—*E. Wyles*, 1, Cockle's Pippin; 2, Golden Noble; 3, Fearn's Pippin; 4, Maltster; 5, Autumn Nelis.—*F. F.* Flower of Herts.—*R. Hudson*, 1, Beurré Bosc; 2, not recognised; 3, Conseiller de la Cour; 4, Beurré de Caen; 5, Beurré Clairgaut; 6, Old Nonpareil.—*W. H. W.* 1, Kentish Fillbasket; 2, Swedish Reinette.—*C. H.* Braddick's Nonpareil.—*B. S.* 1, Court Pendu Plat; 2, Cellini Pippin; 3, Beauty of Kent; 4, Beauty of Plants; 5, Franklin's Golden Pippin.—*R. J.* 1, Court Pendu Plat;

2, Lemon Pippin; 3, Bringewood Pippin; 4, White Nonpareil; 5, not recognised; 6, British Queen Pear.—*G. A. G.* 1, Small's Admirable; 2, Bedfordshire Foundling; 3, King of the Pippins; 4, Sweet Lading; 5, Cellini Pippin; 6, not recognised.—*W. M.* Pear, Marie Louise; Apple, Melon.—*H. E. G.* Gravenstein.—*J. M.* The two Pears were decayed.—*J. F., Witney*, 1, Annie Elizabeth; 2, Beauty of Kent; 3, Yorkshire Greening; 4, Warwickshire Pippin; 5, Scarlet Nonpareil; 6, Uvedale's St. Germain.—*H. Hedges*, 1, Warner's King; 2, not recognised; 3, White Nonpareil.—*T. M. D.* Not recognised, probably a local variety.—*T. P.* 1, Old Nonpareil; 2, Cox's Orange Pippin; 3, Scarlet Nonpareil; 4, Alfriston; 5, Manington Pearmain; 6, Norfolk Greening; 7, Leon Leclerc de Laval.—*E. Hawkins*, 1, a very fine Apple, which we think is Chelmsford Wonder. Send six fruits to the Fruit Committee of the Royal Horticultural Society; 2, Cox's Pomona; 3, a deformed fruit of Easter Beurré; 4, Beurré de Capiaumont; 5, Vicar of Winkfield.—*G. H. H. W.* 1, Beauty of Kent; 2, Golden Noble; 3, a marvellous fruit of Withington Fillbasket; 4, Blenheim Orange; 5, a very peculiar bronzy-coloured fruit, not recognised; 6, King of the Pippins; 7, Melon Apple.—*F. R. Watts*, 1, Blenheim Orange; 2, Stone's; 3, not recognised; 4, Beurré d'Anjou; 5, Beurré Diel; 6, decayed.—*A. Barker*, 1, Brabant Bellefleur; 2, Reinette de Canada; 3, Lord Burghley; 4, Striped Monstrous Reinette.

ODONTOGLOSSUM CRISPUM ADRIANÆ: R. G. F. We are not aware that the name is applied in the form you give it as above. *Odontoglossum Adrianæ* is a supposed natural hybrid between *O. crispum* and *O. Hunnewellianum*. It varies considerably, and already many forms have appeared which have puzzled experts to say positively whether they were true *O. crispum* or *O. Adrianæ* reverting to *O. crispum*; therefore the application of the name *O. crispum* may only be deferred.

PERGOLA: E. H. As you expect the Willows to grow and form a thick screen, it will not be easy to induce flowering climbers to succeed for an appreciable length of time. It will be better to plant strong-growing species, even if they produce ornamental foliage only. Such are *Vitis Coignetia*, *V. Thunbergii*, and the variegated *Hop*, &c.; *Aristolochia siphon* may also be included. Your other questions will be answered next week.

STANDS FOR EXHIBITING GRAPES: E. W. H. The inclined stands on which Grapes are shown for competition are as a rule of the following dimensions:—From front to back an uniform breadth of 14 inches, depth at back 10 inches, and depth at front 2 inches. The length will depend on the number of bunches to be shown on each board. We believe you may obtain them from the horticultural sundriesmen.

SWEET PEAS: Ramee Vineries. "All about Sweet Peas," published at 1s., by the Committee of the Bicentenary Celebration. Apply to Mr. R. Dean, Ranelagh Road, Ealing, and enquire if copies are still obtainable.

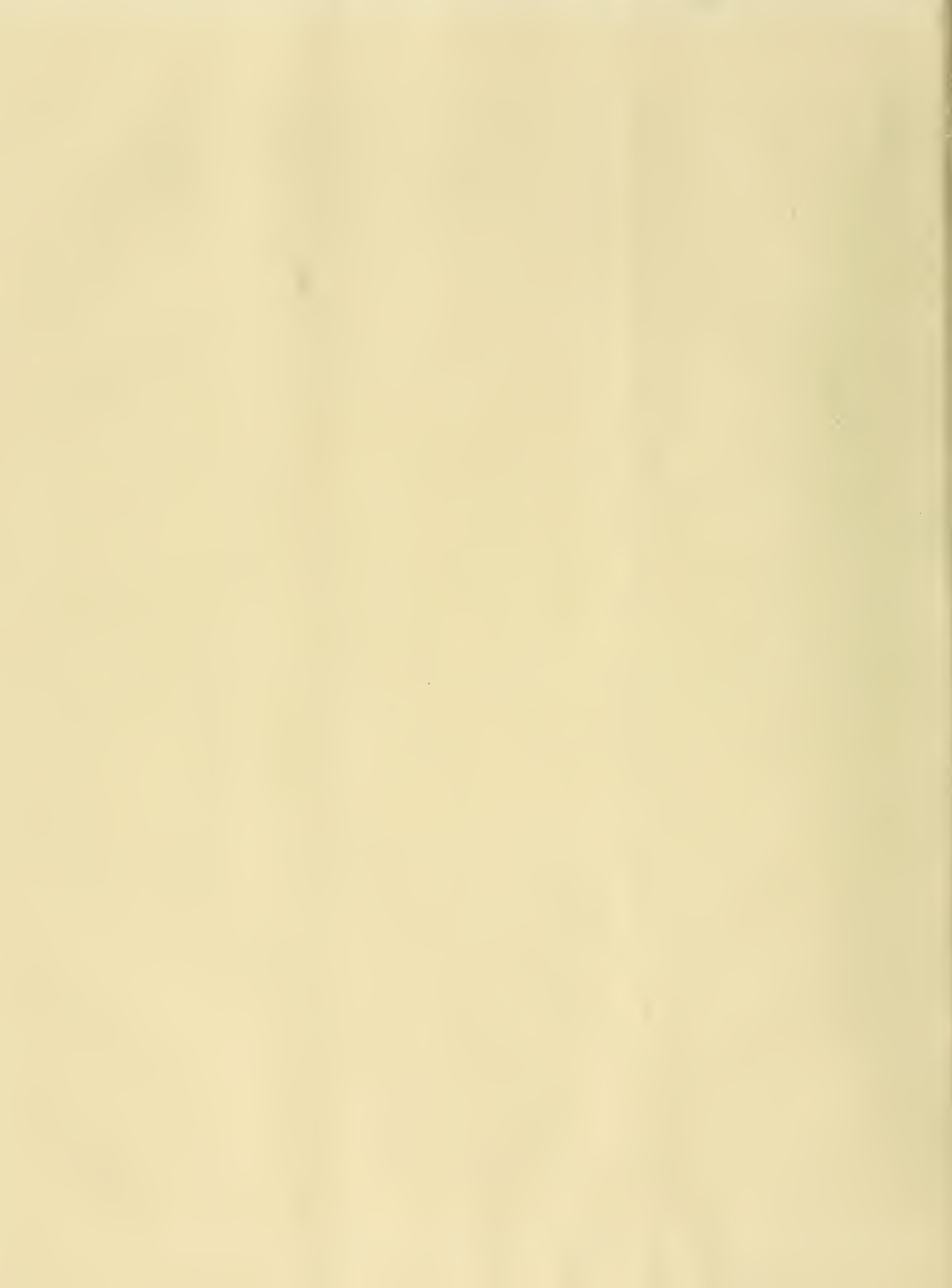
TIMBER BORED BY MAGGOTS: W. P. R. Probably the work of the maggot of the Wood Wasp (*Sirex gigas*), but we cannot be sure without having an opportunity of seeing the maggots.

TRUFFLE: A. K. Yours are good examples of the British Truffle (*Tuber aestivum*), see fig. 157.

COMMUNICATIONS RECEIVED.—Dr. Dammer, Berlin—J. Rashleigh, Louis Gentil, Brussels—Penwill—W. R. F.—Prof. Henriques, Coimbra—S. W. F.—M. Corveon, Geneva—A. Morrison—E. H.—H. W. W.—J. G. Lemmon, California—J. B.—F. M., Dublin—F. M., Brighton—G. P., Esher—G. W. M.—N. M. F.—A. L.—H. B.—Eiffel—Disa—H. B.—E. C.—W. R. R.—T. P.—W. C. C.—Melville—J. H. C.—J. W. H.—F. H.—M. E. L.—W. G. S.—H. W.—R. L. C.—J. K. J.—H. H.—R. W. K.—R. Newstead—J. M.—Winchester Horticultural Society—R. S. Pryer—Miss F. M. F.—W. A. W.—J. G.—W. J. W. S.—W. Cooper, Ltd.—C. T. D.—J. R. J.—S. C.—E. M.—W. A. Y.—Experience.—F. Koehler—W. H. Kew—S. C. H. P.—J. T. A.—Expert.—O. T.—T. Humphreys.—W. W. P.



BOUGAINVILLEA "MAUDE CHETTLEBURGH."





THE Gardeners' Chronicle

No. 934.—SATURDAY, Nov. 19, 1904.

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A BOTANIC GARDEN IN THE SAND-HILLS.

HAVING at one time or another visited many of the botanic gardens and experimental stations in many parts of Europe, from some on the slopes of the Alps to others on the banks of the Thames, and from the gardens of our own country to those on the shores of the Mediterranean, it was with as much interest as surprise that we lately found ourselves inspecting a botanic station at Coxide, in the Belgian dunes. In situation, aspect, disposition of contents, nothing could well be more unlike the ordinary botanic garden. Classification of the inmates according to the accepted systems, as based on morphology, there was none. Picturesque arrangement and landscape gardening, at least such as is artificially designed, there was none. Yet nothing could be more fascinating than these billowy sand-hills as seen in the bright sunshine of an autumn day. The easy curves of the mounds—*montagnes* they call them hereabouts!—their dappled surface with flakes of light alternating with endless shades of grey and brown, the shell-like cream-coloured concavities which tell of the scooping and

denuding action of the wind, are very beautiful. Here and there are scanty patches of green where some plants hardier than the rest have been successful in the constant struggle for existence, or have been able to avail themselves of the shelter such as it is, that is sometimes present—all these things afford delight to anyone with an eye to see. If the visitor happen to be a naturalist, his pleasure will be enhanced, for he will be able to realise and unravel the meaning of much that he sees, and to indulge in conjecture as to the possible significance of much that is not immediately apparent.

These dunes extend from the French shores all along the lines of the Belgian and Dutch coasts to Sleswick, and we know not how much beyond. Monotonous, weird, dreary, some would call them. Others would look on them with dread, mindful of the destructiveness of the sand as it travels inland and covers up the fertile soil. We are not sure that these dunes would afford pleasant walking during a November gale in the dark; but this remark would apply in many other places. Even a confirmed Londoner would have to admit that the streets of the metropolis do not always furnish an agreeable promenade! Be all this as it may, it is in such a locality that the Belgian Government has established a botanical station. The object is to study what are called the "plant associations," to ascertain what plants grow naturally in such situations, and particularly the adaptations by means of which they are enabled to do so, to help and foster them as far as possible, to add to their numbers, and to introduce plants which shall help to fix the sand and prevent its incursions beyond the shoreline. Up to that point the sand-hills act as valuable ramparts against the sea. They prevent it from flooding the rich "polder" land adjacent, which in many cases is level with the sea or actually below it. Indeed, in the numerous towns along the coast-line, even at Ostend itself, it is easy to see that the houses are built on the crest of the sand-hills. The hills in these places are covered with a plentiful crop of houses, which conceal the stratum beneath. Its real nature is rendered apparent by the flights of steps, or by the slopes which descend from the coast-line into the centre of the towns and villages.

We need not trouble the reader with many details concerning the native flora of this district, because it is to all intents and purpose the same as the corresponding districts on our own shores. The plants are, indeed, such as we expect to find on our own coasts—seaside plants, and such as are adapted by their construction to resist the trying conditions to which they are exposed. Many of them are typical "xerophytes," as the expression runs nowadays—that is to say, plants whose organisation and endowment enable them to adapt themselves to conditions of drought, wind, and instability of soil.

The brown patches which are so conspicuous in the sand-hills, at a distance looking like so much cloth or velvet, are due to the abundance of a moss, *Tortula* sp. (?) which covers up the otherwise bare spaces, prevents the dispersion of the sand, and in course of time furnishes a modicum of vegetable mould, affords a protection for

seedling plants, and helps the creeping rootstocks of the grasses to get a grip over the sand.

Of the sand-binding grasses just mentioned comparative trials show that *Psamma arenaria* is the best for the purpose, surpassing in this respect even *Elymus arenarius*. *Carex arenaria* has also been tried at the station, but it does not succeed; on the other hand, *Festuca rubra* does well. It is curious to see how these little tufts of grass arrest the progress of the sand and often form the nucleus of a new sand-hill.

Among other plants that we noted as then or recently in bloom, were *Euphorbia Paralias*, *Diploxys tenuifolia*, *Jasione montana*, *Asperula cynanchica*, *Sedum acre*, *Saponaria officinalis*, *Oenothera Lamarckiana*, *Viola tricolor* var. *salubrosa*, *Anthyllis Vulneraria*, *Epipactis latifolia*, *Parnassia palustris*, *Mentha aquatica*. Some of these, it will be noted, are moisture-loving plants, and others are typically chalk plants. Crépín long since pointed out the identity in some particulars between the flora of the dunes and that of the limestone districts. This is not what one would have expected, and seems to show that the governing factor in this case is not lime, but the power of resisting drought. In the hollows *Sea Buckthorn*, *Hippophae rhamnoides*, in berry, and *Salix repens* were abundant. All this vegetation seems to show that the soil is not so sterile as it looks, and that if a fair chance could be afforded them many more plants might survive.

A little pool within the enclosure of the "garden" was pointed out to us as furnishing some interesting facts. An attempt had been made to introduce into this pool the water-plants found in abundance in similar places in the polders, but with the result that most of them have died; thus the *Lemnas* and *Potamogetons* had all died or disappeared, *Glyceria aquatica* and *Scirpus maritimus* scarcely maintain themselves. On the contrary, *Rumex Hydrolapathum* does well, and so does *Eleocharis palustris*, whilst three species of *Chara* nearly monopolise the water. The three species indicated to us were *hispida*, *fœtida*, and *aspera*. This change in the aquatic flora may be attributed to the fact that the water of the polders is richer in nutritive matters than that of the dunes. The *Sea-Holly*, *Eryngium*, was not seen in this part of the dunes, though common elsewhere. *Cakile maritima* and *Glaucium luteum* also seem to be absent, or rather we ought to say, we did not happen to see them.

Of course the botanist who sees this peculiar flora for the first time, or he who renews his acquaintance with it after an interval, experiences a pleasure which is felt but cannot be described. It is not, however, to be expected that a practical people like the Belgians would establish a botanical station here for the mere delectation of the passing botanist. Their object is wider. It is twofold—scientific and practical. Scientific investigation seeks to ascertain the "reason why," in the hope, nay, the certainty, that practical advantage must follow from its discovery. Practical experiment acts on the axiom that we do not know till we try; and indeed it leads sometimes to unexpected results. For instance, we do not think the average forester or gardener would think of planting many acres of *Poplars* (*Populus*

monilifera) close to the sea, on shifting sand naturally of the most barren character. Yet this has been done on a very large scale in various parts of the dunes with valuable results.

A walk from Nieuport Bains to Nieuport town affords an excellent and most interesting illustration of this. The visitor passes all the way through a forest of what appear to be dwarf Poplars, not exceeding 3 to 4 feet in height, but each with a spreading head. Here and there a taller specimen may be seen. Now, no Poplar would be classed as a "xerophyte," and its comparatively broad foliage would seem ill adapted either to resist the force of the wind or to check evaporation from the broad surface of the leaves. The deciduous character of the foliage, however, saves it from winter-storms and undue transpiration. The Poplars are planted in spring, when the surface sand still retains some amount of moisture. A stake some 4 or 5 feet high is thrust into the ground, and left to take care of itself. Judging from appearances failure is not common. The heads are pollarded at frequent intervals, so that eventually a thick grove results. Owing to the deposit of sand around the trunks, the latter are not able to raise themselves to any great height above the surface-soil; for, as the level of the sand is constantly rising, so the trunk is being correspondingly buried. Many of these trees, apparently young, are really of considerable age, and their trunks descend 30 or even 40 feet beneath the surface. The further inland the higher rises the Poplar above the surface when it is not subjected to pollarding.

Another circumstance favouring the growth of the Poplar under what appear untoward conditions is the fact that dry as the sand may be on the surface, it is moist and even wet at a depth of several feet. The permeability of the sand also allows access of air to the roots which would not be possible in soils of denser character. The copious transpiration from the leaves to which we have referred is also compensated for in this way.

In this particular part of the dunes Conifers, such as the Pinaster, the Scotch Pine, the Corsican or the Black Austrian are not planted, but elsewhere along the coast, as at Knocke and Le Coq, we saw plantations of Conifers consisting of *Pinus montana*, *P. silvestris*, *P. maritima*, &c., wind-tortured it is true where exposed, but looking as if they might advantageously be grown behind the Poplars, the latter acting as "nurses" till the trees were big enough to take care of themselves.

Attempts at planting within the limits of the "garden" itself are at present on a very limited scale. It would seem as if more might advantageously be done in this direction, and a much larger selection of subjects made for trial. To accomplish this satisfactorily, however, some means of exterminating, or at least of keeping the rabbits in check, must be devised. The very presence of such hosts of rabbits seems to afford another indication that the soil, after all, is not so sterile as it looks, else what do they feed on? Experiments are being made with *Acer Negundo*, *A. macrophyllum*, *A. rubrum*, *Alnus incana*, *A. cordifolia*, *Picea excelsa*, *P. pungens*, *Taxodium distichum*, and various others. But the plants at present are too small to afford trustworthy data. Could some nurse plants such as *Lycium sinense*, an excellent plant for binding loose soil, Gorse, or various Brambles, or Lucerne with its deeply rooting stock, be induced to grow, tree seeds might be sown under the shelter so afforded. In the natural hollows of the ground, which retain a certain amount of moisture and in which the Sea Buckthorn (*Hippophae*) and *Salix repens* already grow, the chances would be more favourable.

The sterility of the soil is shown by the results, or rather by the absence of results hitherto obtained, from experiments on the use of manures. Plots of similar area and like exposure have been treated with potassic, phosphatic, and nitrogenous manures, either singly or in combination, in small or in large doses, but without the slightest visible effect. The difference in colour of the vegetation according to the nature of the manure used, and the variation in the constituent elements of the flora, generally noticeable in experimental plots of this kind, have not yet been observed here. The colour of the foliage, and even the identity of the constituent species, remain the same on the manured as on the unmanured plots. It is possible, nay probable, that differences may become apparent, when the experiments have been continued for a longer time. Moreover at present we know little or nothing of the agency of bacteria in such soils. A similar remark applies in the case of farmyard dung or liquid manure. To put manure on to such land is like pouring water into a sieve. If vegetable humus could be induced to form, as it would do were more extensive plantations of trees made, the case would be altered, and doubtless, ultimately, the sterility of the soil might be in considerable measure overcome. The absence of lime suggests that this element might be added with advantage. It is probable also that were the manures we have mentioned applied at different seasons, it would be found that they were more effective at some times than at others. At any rate, it seems worth while to try whether this is so or not.

Comparative "phenological" observations are also made at this station, and at certain other establishments in various parts of Belgium. One plant of a particular species is divided into several pieces, one of which is sent to each of the stations, and planted on the same day. Thus not only is the same species grown, but an offset of one and the same plant is grown at each station, and the phenomena of growth—such as the expansion or fall of the leaf, the opening of flowers, the ripening of the seed—are recorded at each on the same date. As great a degree of uniformity as possible is thus obtained; but even then allowance must be made for the possibility of variation in particular buds, and for the occurrence of sports or sudden "mutations," as Professor De Vries would call them. This reference to "mutations" recalls the fact that a curious variation in *Anagallis arvensis* has been noticed to be common here. Not only are the leaves more fleshy than usual, as happens frequently in the case of sea-side plants, but they are arranged in threes instead of in pairs. It is curious also to see that *Saponaria officinalis*, which is common in the dunes, almost invariably produces double flowers!

We should have to extend our remarks to an unwelcome extent if we alluded to all the experiments and observations which are being carried out in Coxyde, and their significance physiological or practical; but we may safely conclude by saying that the garden is already unique in its interest, and needs only a more liberal support to render it a most important factor in the development of the resources of the sand-dunes of Belgium. *M. T. M.*

TREES AND SHRUBS.

AILANTHUS VILMORINIANA.

UNDER this name is figured and described, in the *Revue Horticole*, September 16, a new species of *Ailanthus* from China. It is growing in the collection of M. Maurice de Vilmorin at Les Barres. It is stated to differ from *A. glandulosa* in its much longer leaves, its different colour, the presence of spines, and other particulars.

KEW NOTES.

GOMPHIA THEOPHRASTA.—An excellent specimen of this Brazilian plant, belonging to the order Ochnaceæ, is flowering in the Palm-house. It was introduced into cultivation nearly fifty years ago by one of Mr. Linden's collectors. At the present time its cultivation appears to be almost restricted to botanical gardens, but it is a bold and striking plant for stove-decoration. The specimen now flowering is probably twenty years old, having an upright woody stem 7 feet in height, surmounted by two large crowns of ovate-lanceolate leaves, which average 2 feet in length and 4 to 7 inches in width, with a coarsely serrate margin; they are of a somewhat leathery nature, and have short, thick petioles. The inflorescence is a large, erect, freely-branched panicle, which on this specimen is 18 inches high and 1 foot in width, carrying a multitude of golden-yellow flowers, each with a diameter of 1 inch. The individual blossoms do not last very long, but a good succession is maintained from the very numerous buds.

NERINE LUCIDA.

Several bulbs of this species are now flowering in No. 7, in the T-range; it is a very handsome pink-flowered species, which as yet is not in general cultivation. In size, the bulbs are amongst the largest of *Nerines*, producing leaves of the *N. sarniensis* type; the stout flower-scape is some 15 to 18 inches high, carrying from six to nine large flowers, the segments of which are 2½ inches long by ¾-inch broad in the widest part. About one-third of the length of segment is curved backwards. It is by far the largest-flowered species in cultivation at Kew, and so far has proved to be as free-flowered as any species of this beautiful genus. *W. H., November 6.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM INSIGNE "MRS. F. W. MOORE."

THE fine yellow form of *Cypripedium insigne* which appeared at the Royal Botanic Gardens, Glasnevin, Dublin, and is named in compliment to the wife of the respected Curator, proves a very worthy addition to that popular class. It is perhaps the strongest-growing and most robust of yellow flowered forms of *C. insigne*, its habit of growth being similar to that of *C. insigne* Harefield Hall variety.

From a specimen sent the following particulars were noted:—Petals broader than in most varieties, and extending rather over 5 inches from tip to tip. Dorsal sepal 2½ inches wide, the lower half yellow with raised blotches tinged with emerald-green; the upper part to the extent of 1 inch pure white, the white extending to the base on the margin. Petals yellow with a slight tint of emerald-green in the veining. Lip shining clear yellow; staminode also yellow with orange-coloured centre.

LÆLIO-CATTLEYA × ARDERNÆ (L.-C. × CALLISTOGLOSSA × L. DIGBYANA).

A fine hybrid, showing the utility of second crossing, has been named after Mrs. Arderne, Hazel Mount, Stepping Hill, Stockport. It flowered recently with the raisers, Messrs. Sander & Sons. The sepals and petals are broad and flat, the lip ample and finely fringed. The whole flower displays but two colours, it being of a delicate rose-pink with lemon-yellow disc to the lip. The introduction of L.-C. × *callistoglossa* (*L. purpurata* × *C. Warszewiczii*) into its composition has given greater breadth to the segments than in most other forms of its class. The plant has passed into the collection of Samuel Gratrix, Esq., West Point, Whalley Range, Manchester and received a First-class Certificate at the last Manchester show.

CYMBIDIUM CYPERIFOLIUM.

This elegant Himalayan species is flowering in the gardens of Ludwig Mond, Esq., The Poplars, Avenue Road, Regent's Park (gr., Mr. J. O. Clarke). Its long, dark green leaves are gracefully arranged, and the arching racemes of flower are equal to those of *C. giganteum*. The sepals and petals are yellowish striped with red, and the lip cream-white with dark red spots. Mr. Clarke has a large number of very fine *Cymbidiums* in a cool intermediate house, where they grow and flower luxuriantly. The specimens of *C. Tracayanum* are sending out very strong spikes, and the very large and dark-coloured variety, *Rajah*, promises to be even better than last year. Among the *Cypripediums* several of the fine yellow *C. insigne* Sanderæ and some good forms of *C. Charlesworthii* are in bloom. J. O'B.

HERBACEOUS BORDER.

ALTHÆA FICIFOLIA.

MANY prefer the single Hollyhocks to the monstrously doubled florists' flowers now generally met with in gardens, which entirely lack the grace of form shown by the blossoms of the cottagers' plants, with their doubled centre and clear guard-petals. Of all the singles the most delightful is the species known as the Fig-leaved Hollyhock, *Althæa ficifolia*, which is worthy of inclusion in the best herbaceous border (see figure in *Gardeners' Chronicle*, February 23, 1895). It does not attain the great height of the ordinary Hollyhock, rarely exceeding a stature of 5 feet, or at most 6 feet. Its flowers are of lemon-yellow colour, 3 to 4 inches across, of delicate texture and very refined appearance. The leaves are large, palmate, and five to seven-lobed, somewhat resembling those of a Fig-tree. From July to September this Hollyhock creates a beautiful picture in the garden; while as it does not appear to be so susceptible to the dreaded disease as the florists' varieties, it is rarely seen in bad health. It is a native of Siberia, and has been known for over three hundred years. S.

LUPINUS CRUIKSHANKII.

I was very pleased to see Mr. Fitzherbert's note about this plant in the *Gardeners' Chronicle* for September 17, as it makes a handsome plant for herbaceous beds or borders, and is not half so well known as it deserves to be. I have only a small border, but I always find room for a few plants of this Lupin, as it is invaluable both for the pleasing colour of its flowers and the length of time it continues in bloom. At the present time I have it associated with *Coreopsis grandiflora*, a few plants being dotted here and there amongst the latter, and it is surprising how the Lupins enhance and at the same time tone down the brilliant yellow of the *Coreopsis*.

I usually sow about March 20 in places where it is intended to grow, planting three seeds in a triangle, and removing two of the plants when they are a foot high. It is best to have an extra number of plants, as slugs are very fond of this Lupin. The first spike of flowers is produced when the plant is from a foot to 18 inches high, and as the flowers fade away three lateral shoots spring from below the spike. These bear upright, terminal spikes of flowers, and growth is again produced from below these, and so on until the plant is killed by frost, so that in August and September the plants are from 4 feet to 5 feet in height, carrying from twelve to twenty spikes of flower, each spike being from 6 inches to a foot in length. I have grown it for four years, and from the quantity of seed it bears and the general habit of the plant, I should say it is an annual. A dark-blue form has appeared with me during the past two years, which bears dark-coloured seeds about half

the size of those of the type, though the plants are quite as large and vigorous. It is a true Oxford-blue in colour, and forms an excellent companion to the true form. I have tried *L. Cruikshankii* in light and heavy soils, and in both wet and dry seasons, and have found it an easy plant to grow, while it is a continuous bloomer from May to October. The flowers last well in water when cut. J. C., Bagshot, Surrey.

COLONIAL CORRESPONDENCE.

ALOE NATALENSIS.

I SEND you a photograph (see fig. 158) of *Aloe natalensis* (Wood & Evans). The plant is growing in the Town Gardens, Durban, and is very ornamental at any time, but especially so when

EXPERIMENTAL CULTIVATION.

(Continued from p. 161.)

MANURING EXPERIMENTS—SPECIAL CROPS AND MANURES.—The general principles that should regulate experiments with manures having been already discussed, it now remains to say something respecting the manuring of special crops, and the sources of special substances or mixtures employed. To illustrate the methods adopted, three vegetable and three fruit crops will be taken, namely, under the former, Potatoes, Cabbages, and Asparagus; under the latter, Apples, Strawberries, and Gooseberries, each representing a distinct type, and demanding different treatment in many respects.

POTATOS.

This highly important crop has had many experiments devoted to ascertaining what are its

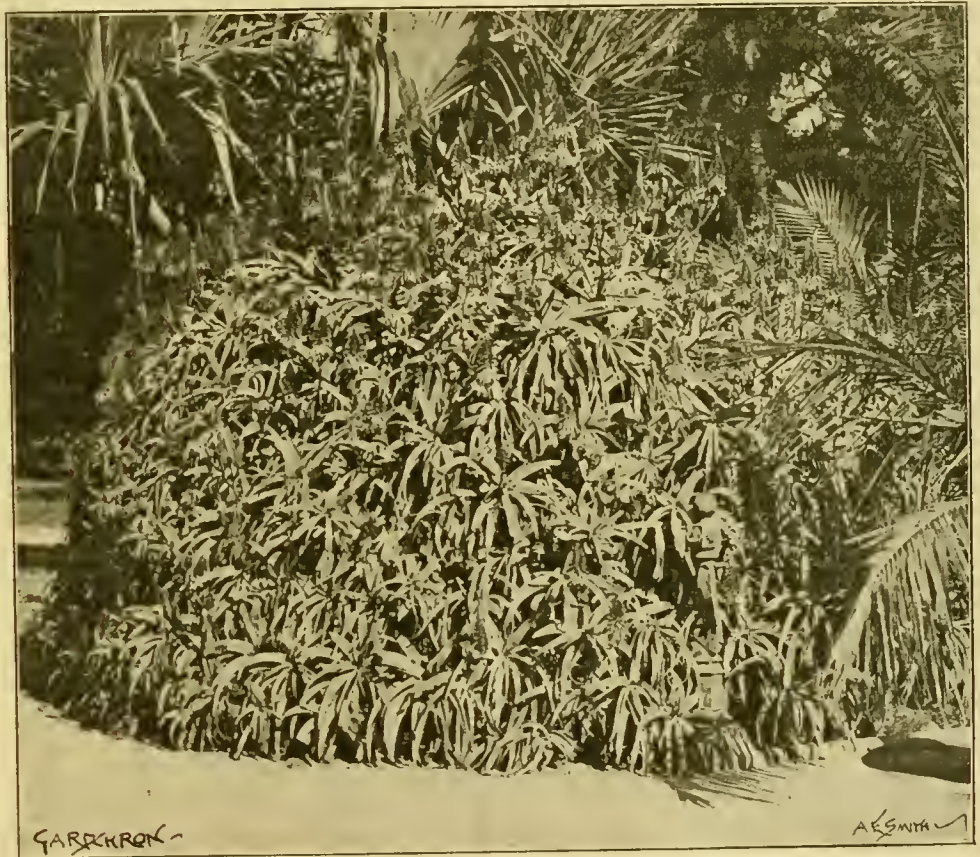


FIG. 158.—ALOE NATALENSIS.

bearing its numerous racemes of orange and red-coloured flowers, racemes appearing from most of the rosettes of mature leaves.

It is a native of the midlands of Natal, and is usually found in rocky places and at the edges of woods; in such situations I have frequently seen plants as large and as full of flowers as the one represented in the illustration, which was taken at my request by Mr. W. D. Haygarth, of Durban. The plant was figured and described in *Natal Plants*, vol. iii., plate 258. J. Medley Wood, Director of the Natal Botanic Gardens.

CASSELL'S "POPULAR GARDENING." — Part 16 of this useful periodical is before us. It contains an article, with a coloured plate, of a Water-garden; also papers on Roses and Rose-gardens, Beautiful Flower Gardens, Fruit, Heating all types of Houses, Bulbs, Chrysanthemums, Orchids, and Mushrooms.

special requirements, the most prolonged of these being those conducted at Rothamsted for twenty-six years (1876—1901). There, in the Hoos Field, ten plots, each one-sixth of an acre in extent, have been devoted to Potatoes year after year, unmanured plots being compared with others receiving farmyard manure alone, or with superphosphate or nitrate of soda in addition; while separate plots have been appropriated to testing nitrate of soda, ammonium salts, superphosphate, and mixed mineral manures alone. The farmyard manure was used at the rate of 14 tons to the acre, the nitrate of soda and ammonium salts being supplied to yield 86 lb. nitrogen per acre, and the mixed mineral manure comprised superphosphate, with sulphates of potash, soda, and magnesia over a great part of the time; but in the later years 400 lb. of basic slag per acre was substituted for the superphosphate. Taking the average total crops for the twenty-six years the produce is not very large, but there is a

marked difference between the results on the unmanured plots (= 1.4 ton per acre) and those which have had farmyard manure alone or with mixed mineral manures, or where the latter have been supplied with ammonium salts or nitrate of soda in addition (= 4.8 tons to 5.4 tons per acre). Where ammonium salts or nitrate of soda have been used alone the crops are little better than in the unmanured plot (= 1.7 and 2.1 tons per acre); the superphosphate and mixed mineral manures alone are also not much above the others in results (= 2.7 and 2.9 tons per acre), the advantage of nitrogen in addition to complete mineral manures being thus well shown on the Rothamsted soil. This is in accordance with general experience; but farmyard manure in conjunction with mineral manures usually gives much more marked results than the minerals alone.

In the Agricultural Education Association's scheme the minimum size of plot recommended is one-twentieth of an acre, and sixteen distinct experiments are enumerated, grouped as follows: 1. What is the leading requirement of the Potato in this soil? To obtain an answer five plots are set apart, one with no manure, one with a complete mineral manure (nitrogen, phosphoric acid, and potash), and three with incomplete manures, omitting in turn either potash or phosphoric acid, or nitrogen.

2. What is the effect of dung, and of artificials used with the dung? Four plots are allotted to solving this question; 20 tons of dung are given alone in one case, and 10 tons in another; 10 tons are given with the complete mineral manure (= 40 lb. nitrogen, 60 lb. phosphoric acid, and 80 lb. potash); and in the fourth the 10 tons of dung are supplemented by half the complete mineral manure.

3. What should be the composition of the artificials for use with the dung? Here three plots are included, 10 tons of dung being given in each with nitrogen and phosphoric acid, nitrogen and potash, phosphoric acid and potash. The nitrogen supplied is equivalent to 20 lb. per acre, the phosphoric acid to 30 lb., and the potash to 40 lb., namely, half the amounts in the complete manure.

4. What are the effects of kainit, muriate of potash, and nitrate of soda on the crop? Four experiments deal with this question, in which kainit is substituted for sulphate of potash in two amounts, equal to 40 lb. and 80 lb. of potash per acre. Muriate of potash is also used to replace the sulphate, and nitrate of soda is given as the source of the nitrogen.

Where the space is too limited to deal with all these at one time it is recommended that groups be taken of the sections as follows:—1, 2, and 4; 1, 2, and 3; or 1 and 2. Further, it is advised that all manures be applied in the drill, and that "cooking tests be made wherever possible." Such an elaborate plan, excellent as it is, would require some modification to suit special requirements; but the basis is all that could be desired, and it should furnish a useful guide to all undertaking experiments with this crop.

Dr. Bernard Dyer's experiments with Potatoes on the heavy soil at Hadlow have been directed to affording a comparison between the effects of dung in different amounts alone and with artificials. There has been no unmanured plot, which for the purpose of comparison is to be regretted, but it is no doubt assumed that for market garden purposes to attempt to grow Potatoes without manure would be a waste of time. Eight experiments have been devoted to this work for seven or eight years, and the weights of dung given are 25 tons and 12½ tons per acre alone and with phosphates, potash and nitrate of soda; but the potash is omitted in three plots, the dung in one plot, and the nitrate is supplied in two amounts, i.e., 2 cwt. and 4 cwt.

It is interesting to note that the average results for the early varieties are in favour of the twenty-five tons of dung alone (= 7 tons 7 cwt. per acre); while for the late varieties the advantage is with 12½ tons of dung and the complete mineral manure (= 11 tons 3 cwt.). Where the heavy dressing of nitrate is used it is advised that 2 cwt. be applied at the time of planting, and the other 2 cwt. at the earthing-up.

In experiments conducted by myself during many years, I have contrasted the effects of dung with mineral manures, but have always found a combination give more satisfactory results than either alone; but the soil is a very potent factor. The question of the time for applying the nitrogenous manures is one that needs further investigation, though from general observation I do not think that applying them at the time of planting gives a proportionate return to that obtained by applications at a later stage when growth is proceeding. It is, however, well worthy of being tested more fully. Another matter also is deserving of systematic experiment—namely, the substitution of a growing crop turned into the soil before planting, in the place of dung, or at least to reduce the amount required. On some soils Rye-grass, dug or ploughed in, gives most satisfactory results with Potatoes, and other green crops serve a similar purpose. *R. Lewis Castle.*

(To be continued.)

FOREIGN CORRESPONDENCE.

THE PARENTS OF CRINUM POWELLI, Hort.

MR. BAKER, in his valuable *Handbook of the Amaryllideæ*, tells us that *Crinum Powellii*, a favourite garden hybrid, is a cross between *C. longifolium* and *Moorei*, but I am now informed that this is an error, or otherwise we must admit the possibility of two widely differing pollen-parents producing the same plant hybrid. I have during twenty years pollenised many *Crinums*, and have preferred the most widely differing species of very diverse origins, and as *C. Powellii* is said to be hardy in Great Britain I included it in my experiments. The fine *C. longifolium* of Thunberg, with its splendid pure white-flowered variety, is always preferred as a seed-parent, and I am pleased to find some very interesting and fine hybrids obtained from them here in my Tusculum, near Naples. Five years ago, during a very hot summer, late in August I saw the large-rooted and somewhat rare *C. pedunculatum*, R. Brown, from Eastern Australia, in flower. This is hardy here if cultivated against a wall, and slightly protected from December to February. It drops its large leaves every winter with the first frosts, but the long roots always survive until spring, when new foliage is produced freely. It flowers late in summer, as does *C. longifolium*, after a rest during July and August; after the rains in September it flowers a second time. It was easily pollenised with the ripe pollen of the Australian species. The operation was quite successful, and some thirty well-ripened seeds were the first welcome return. These seeds, sown while fresh the same autumn in a cold frame, and kept in all the sunshine available, came up very soon, and the small plants have stood out-of-doors all the year and are evergreen, and suffer nothing during the winter, but grow more and more robust, and even stronger than the two parents. They differ but little, but not one has yet flowered even after five years, though single seedlings of *C. longifolium*, the seed-parent, always flower the fourth year after sowing. Precautionary measures were necessary during the fertilising season. The flowers were protected with a sheet, their stamens counted before they were ripe, and no other *Crinums* were in flower at the time, so I am quite sure

that the results are genuine. My *C. Powellii* differs very little from the plant received with that name from England, but I will briefly describe it here:—Bulb somewhat globose at the foot, but with a very long neck and light-brown skin. Leaves sixteen or more, spreading, very long, often 5 feet by 4 to 5 inches, broad low down, ensiform, acuminate, bright green, somewhat tufted with brown. It grows here in the open-air all the year round, just as does *C. Powellii* from England. Leaves smooth on the edge, as is the foliage of the seed-parents, whilst those of the pollen-parent are somewhat scabrous. Peduncle compressed, or nearly cylindrical, a little tortuous, glaucous, 2 feet or more long. Flowers about fifteen or more in an umbel, unpleasantly scented; pedicels 1½ to 2 inches long; spathe-valves large, oblong-lanceolate, with much curved and curled filaments; perianth-tube curved, light green, as long as the pedicels or a little longer; segments oblong-lanceolate, acute, delicately flesh-coloured or reddish, about 4 inches long, an inch broad in the middle; stamens half the length of the perianth-segments; style red, brightening towards the top; completely sterile, as are almost all my best hybrid *Crinums*.

The foliage of the seed-parent is very glaucous, whilst that of the pollen-parent is, as is well known, bright green, rigid, and very thick and solid.

Amongst seedlings of the same date are some with the leaves much resembling those of the pollen-parent, others with thick leaves as green as those of *C. pedunculatum*, but not so stiff or rigid. We shall see shortly how to classify them, and if the flowers approach more nearly to those of the pollen-parent we shall then have some agreeable surprises. It seems to me that there is no doubt that *C. Powellii* is the offspring of *longifolium* and *pedunculatum*, and not of *Moorei*. My *Powellii* is not quite like the English plant, but the difference is easily explained.

I have here many fine hybrids from *C. Moorei*, but their flowers are always larger than the largest of *Mooreis*, and never smaller, so how could it have produced such a small-flowering child as is *Powellii*? *Charles Sprenger, Naples.*

NOTES FROM SANDRINGHAM.

FOR the last five years I have had the pleasure of making an annual visit to these gardens, and I have never returned from Sandringham without having added to my knowledge. At the time of my visit in September last the Vines appeared most flourishing. Never have I seen so fine a house of Lady Downe Grapes. The bunches were large, and had exceptionally fine, beautifully-coloured berries. Black Hamburgs, planted but two years since, have made grand growth, and should in the near future give satisfactory results. Black Alicante had bunches averaging 3 to 4 lb. in weight, and as near to perfection as it is possible to attain. Such high-class varieties of Grapes as Madresfield Court, Mrs. Pince, Muscat Hamburg, and Muscat of Alexandria are largely encouraged, and they promise by their freedom of growth to give the desired results in the near future. Peaches have been a fine crop, one tree especially of Royal Ascot reaches the top of a 14-foot wall, and a width of 30 feet, and bore an excellent crop of good fruits. The foliage on the trees generally is an indication of what has been and is likely to follow in the matter of fruit. Many alterations are being carried out in the matter of re-roofing Vineries and Peach-houses.

In the hardy fruit department full crops were to be seen. Cordon Apples are grown here in hundreds on each side of the long border fringing the path through the kitchen-garden to the

dairy. All the trees, especially these of Cox's Orange Pippin, were roped from end to end with high-coloured fruits. The bushes were the same, all were laden with fruits.

In regard to Pears there were huge crops on the walls of all aspects from horizontal as well as espalier-trained trees. Varieties like Doyenné du Comice, Beurré d'Amanlis, Louise Bonne de Jersey, Marie Louise, Glout Morceaux, Knight's Monarch, Josephine de Malines, and Conference were exceptionally fine.

In the plant department there was much that was interesting. Huge batches of one plant are required here to make the desired effect. For example 1,000 plants of *Begonia Gloire de Lorraine* are grown. Plants in 3-inch pots up to year-old roots in 10-inch pots are cultivated. The whole batch is in such a condition of health that it would be difficult to match them in a private establishment. Mr. Cook grows some of the largest plants a second year, and with good results as many of them reach as much as 4 feet in height and of corresponding width—really handsome specimens. *Heliotrope "Madame de Bussey"* is a great favourite for winter-flowering; as many as 500 plants, mainly in 7-inch pots, are grown. The cuttings are inserted in March and April, and the plants are grown on freely, yet so stocky that in September they averaged but 8 or 10 inches high from the pot, and in a condition to give huge quantities of flower.

Calanthes are used in quantity. It would be difficult to find a finer batch of *C. Sanderiana* and *C. Veitchii*. Especially good is a batch of *Clerodendron fallax* in 5-inch pots. The plants, 2 feet 6 inches high, were just throwing huge panicles of flower, with exceedingly dense green leaves; they are all from seed sown in February. *Salvia Bethellii* and *S. speciosa* are especially good; the pink-coloured flowers of the former species are as much admired as the crimson flowers of *S. speciosa*.

Grevillea robusta is found to be most serviceable when about 1 foot high in 4-inch pots. Hundreds of such plants are employed annually; this year they are especially numerous, the seed having germinated well.

Cyclamens are grown well, the foliage of many was more richly marbled than any I had previously seen. Mr. Cook intends to make a selection of plants with specially well-marked leaves. He prefers sowing the seed early, at about September, and giving the plants a long season of growth.

One large span-roofed house is devoted to *Codiaeums*, well-coloured plants from 6 inches high to as many feet were seen. Ample space is given to the larger plants, hence they colour well.

Carnations are grown in huge quantities; not that the houses are especially well adapted for their growth, being too lofty, still the results are satisfactory. The appearance of the plants was all that could be desired.

In the corridor such subjects as *Plumbago capensis* and its white form were flowering most freely; also *Cassia corymbosa* with its clusters of orange-yellow-coloured flowers; *Lithospermum scandens*, *Begonia fuschoides* and *Ipomœa cœrulea* were also noticed in this structure.

Chironia exifera, with its pretty deep rose-coloured blossoms, is appreciated, and much attention is paid to *Chrysanthemums*. For producing large flowers 700 plants are grown, and there are as many in bush form. Nothing could be of greater promise than the whole batch of plants, stocky, well clothed with deep green leaves.

In the pleasure-grounds many improvements have recently taken place, such as the clearing away of common Laurels and the substitution of hardy flowers in desirable spots to give masses of colour.

A semi-wild garden on a small scale has been made. On the whole Mr. Cook is well maintaining the excellence with which these gardens have long been credited. *E. Molyneux.*

DISCOVERY OF FRUIT OF APPLE-MILDEW IN ENGLAND.

The mildew of Apple-trees (*Sphaerotheca mali*), which gives to the leaves the appearance of having been very liberally dredged with flour, has been present with us for many years, but up to the



FIG. 159.—APPLE-SHOOT WITH MILDEW.

present season the higher or "ascigerous" form of fruit has not been met with in this country. The parasite has been supposed to perpetuate itself from year to year by means of the numerous

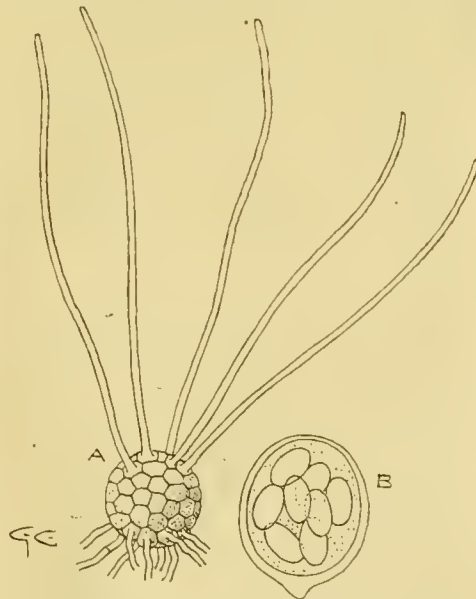


FIG. 160.—APPLE MILDEW.

A.—Ascigerous fruit of Apple mildew with its appendages.
B.—Ascus with eight spores.
(Highly magnified.)

"conidia" or spores produced on the leaves, and by the presence of perennial mycelium in the tissue of the infected shoots. This latter supposition has not been definitely proved, but

its almost constant recurrence on shoots once infected points to this condition of things. The mildew is fairly abundant on Apple-trees throughout Europe, but the ascigerous fruit has only quite recently been met with in Russia, its first European record. The undoubted rarity of ascigerous fruit proves that the fungus is undoubtedly capable of maintaining its existence by means of its conidia, or by perennial mycelium. The latter method is quite likely, as an allied parasite, the Vine mildew (*Oidium Tuckeri*) has quite recently been shown to have perennial mycelium (spawn) in the young Vine shoots, and from this mycelium the first conidia of the season are produced. These conidia being dispersed by currents of air infect other leaves, and an epidemic follows unless promptly checked. Like the Apple mildew, the ascigerous fruit of the Vine mildew has only quite recently been observed in Europe. The ascigerous fruit of both these parasites is common in the United States.

The ascigerous fruit, appearing to the naked eye as minute black points nestling in the white superficial mycelium, was found on adventitious shoots springing from near the base of the trunk of an old Apple-tree at Mortlake, Surrey.

During damp seasons the mildew is very injurious, as it arrests the increase in length of shoots that are attacked, hence the leaves form a terminal tuft. Spraying and dusting with dry sulphur have little effect on the parasite, and as the disease appears year after year at the same points, it has been proved that the most certain remedy is to cut off and burn all diseased terminal tufts of leaves, along with the short stunted shoot from which they spring. *Geo. Massee.*

MAY IN MY FLORIDA GARDEN.

(Concluded from p. 330.)

ROSES, &c.—There is a great dearth of Roses during May. The main blooming period of the "Queen of flowers" are the winter months and the early spring. On my east verandah a large specimen of my favourite Rose, the strongly and deliciously sweet-scented *Maréchal Niel*, still opens its immense flower-buds during these dry weeks. The buds are suffused with coppery-red, and when fully open the flowers also frequently show a reddish hue on the golden-yellow ground colour. *Weedland Margaret*, a bluish-white *Noisette*, pervades the air almost as strongly with its delicious perfume as *Maréchal Niel*. *Lamarque* still flowers in large clusters, but *Cloth of Gold* is disappointing, its flowers being neither golden-yellow nor very fragrant.

The glory of the garden consists in the many varieties of *Magnolia grandiflora*. May is their main flowering time. At this time also the young foliage expands, in some varieties light green, in others suffused with red and brown lines. Foliage and flowers vary very much in size and form. The delicious perfume of the white flowers pervades the air everywhere. This is my favourite tree. No other one affords so much pleasure; none is so refined and charming.

The Oleander grows here to an immense size, being perfectly at home on the high dry pine-land. The bushes in my garden have been in bloom for weeks. The common rosy-red form (*Nerium Oleander splendens*), with fragrant flower trusses, and the white scentless variety are the best as far as their long-flowering period comes into consideration. Every shoot, every branch is terminated with a heavy flower-bunch—a bouquet in itself, and the stems therefore bend to all directions. Large specimens in flower are so conspicuous that they can be seen a mile away. The rarer varieties, such as *Paul Sahut*, *Felix Bourgnat*, *Mad. Peyre*, *Madonna grandiflora*, *Savort*, &c., do not grow with me to such a large size as do the old varieties, and their time of flowering

is only of short duration. They never continued flowering longer than about two weeks, but then they were a sheet of bloom.

RARE PLANTS IN FLOWER.

Of the rarer plants in flower during May in my garden the following must be mentioned:—*Bauhinia purpurea*, *B. variegata*, *B. acuminata*, *Cassia brasiliensis*, *Tecoma grandiflora*, *T. capensis*, *T. velutina*, *Lonicera sempervirens* var. *minor*, *Agapanthus umbellatus*, *Clivia cyrtanthiflora*, *Clethra arborea*, and *Jasminum Sambac*.

Palms flowered abundantly during May—*Cocos Blumenavia*, *C. Alphonsei*, *C. Benneti*, *C. australis*, *C. Gaertneri*, *C. campestris*, *C. Yatay*, *C. Romanzoffiana* were all in bloom, and continued to be so all through the summer, flowering and ripening their aromatic fruit at the same time. *Phoenix spinosa*, *P. reclinata*, *Sabal Adansoni*, and *Serenoa serrulata* were also flowering.

Some plants flowered during this month which I had never before seen in bloom. The most beautiful among these was *Pithecoctenium muricatum*, which I raised from seed collected by the late Dr. Thomas Merong in Paraguay. The flower-trumpets are creamy-white, yellow at the throat, half closed. The plant is a strong climber here, and very beautiful. A bushy, small tree of *Tristania conferta*, with broad evergreen, glossy foliage, was in full bloom by the middle of the month. The flowers were small, white, with crimped segments. This is a native of Australia. The Japanese *Sterculia plataniifolia* showed large loose flower-spikes of a greenish-white colour well above the foliage.

While speaking of the flowers in the gardens of Florida, we cannot omit the brilliant and always exceedingly showy *Hibiscus Rosa-sinensis*. It is always in flower if not cut down by a sharp frost, and it is as common here as the "Rose of Sharon" is up north.

During the last days of May the Loblolly Bay (*Gordonia lasianthus*) came into flower. The blossoms are pure white, with yellow stamens, and very fragrant, reminding one of large single Camellias. The tree is a beautiful broad-leaved evergreen, and one of my favourites. I transplanted quite a number from the edges of muck ponds into my garden, where they flourish vigorously in the dry, sandy soil. The tree has the additional charm that the old leaves assume a brilliant red colour, and the contrast between the green and red foliage and the white flower is very striking. *H. Nehrting, Florida.*

BOOK NOTICE.

INDEX KEWENSIS (Supp. ii., fasc. 1).

THE utility of this monumental work is daily appreciated by those who have to deal with the names of plants and their synonyms. The original work, prepared by Mr. Daydon Jackson under the superintendence and with the co-operation of Sir Joseph Hooker, was completed in 1895. In these volumes are recorded all, or practically all, the names of plants, from the time of Linnaeus up to the end of 1885. A first supplement, prepared by M. Durand and Mr. B. D. Jackson, is in course of publication, and has reached the letter "Rhy." This supplement is intended to bring the record down to 1895.

A second supplement is in course of preparation at Kew, under the general editorship of Sir William T. Thiselton-Dyer, and is intended to comprise all the names of the genera and species described from the beginning of the year 1896 to the end of 1900.

Of this the first part, extending from "A" to "Leu," is now issued from the Clarendon Press, Oxford, and subsequent supplements will be prepared by the staff of the Kew herbarium. We are so grateful for the work, and so thoroughly appreciate the labour and care involved in its

production, that we can but long for more. For instance, we should have liked to see a more frequent insertion of dates of publication. We observe that "*Adenia*" of Forster is referred to "*Modecca*" of Linnaeus. The insertion of a date would probably have supplied the reason why. We find *Adenia cladosepala* of Harms referred to *Modecca cladosepala*, but no indication is given as to the author of the last-mentioned name. Proper names, when used in the form of adjectives, are now spelt, in accordance with the present Kew usage, with a small initial letter. In the original work they are spelt with a capital. For the sake of uniformity it would probably have been better to have maintained one usage throughout. It is difficult also to see why Tournefort's genera are retained in a book not supposed to go further back than the time of Linnaeus, though it is, of course, true that the Swedish botanist adopted the generic names of his French predecessor.

We believe that in the compilation, at least of the earlier volumes, a great number of "garden" names, for which no authoritative botanical sanction was forthcoming, were eliminated. To this we can offer no objection. Nevertheless it would be a great convenience if these names could be published. If they have no botanical significance they might still be valuable records in the history of horticulture if the dates were forthcoming.

But these are all minor points of detail, concerning which opinions may differ, and they cannot fitly be discussed in these columns. Suffice it for us once more to express our admiration of the care and patience bestowed on the book, and of our appreciation of the great boon conferred on the botanical student by its publication.

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Root Pruning.—The weather has been all that could possibly be desired for this operation, which ought now to be drawing to a close. But in gardens where such work has been unavoidably postponed, let it be done at once. This operation should not be neglected where there are trees which are unfruitful owing to the wood being too thick and strong. In order to obtain the best results from fruit-trees, it is necessary that the trees should possess plenty of fibrous roots, growing in suitable soil, sufficiently near to the surface of the ground to be influenced by the sun's rays and by occasional top-dressings. This last-mentioned condition is especially desirable in the colder parts of the country and in low-lying districts. In unfavourable sites the borders should be raised several inches above the level of the surrounding ground, and the whole be thoroughly well drained.

Plum Trees on East or West Walls very often make too much wood, and fail to yield a good crop of fruits, notwithstanding they produce a wealth of flowers. In such cases, if the trees are not too old, lift the roots entirely, and replant them, bringing the thongs, &c., nearer the surface, trimming the damaged tips and relaying the roots in a fresh compost should the staple be unsuitable. In unfavourable localities do not plant shy-fruited varieties, but such as Rivers' Early Prolific, Victoria, Jefferson's Prince of Wales, Monarch, Grand Duke, Coe's Golden Drop, and Green-gage; the last-mentioned variety should be given a good position. When replanting the trees allow room for the bark to swell between the stem and the wall. Secure the branches against damage by wind in such a manner that the ties will allow the trees to sink with the new soil. At all times when replanting trees the soil should be worked well amongst the roots and made firm, more or less according to the nature of the soil.

Pruning and Nailing.—Do not nail in too much wood when training Plum-trees, or employ more nails and shred than are really necessary, but secure evenly over the trees a supply of

young wood; that which is two summers old frequently produces the most and the best fruits. To pull the main branches into position use strong tar-twine or willows, placing behind each tie a piece of cloth to prevent the bark from being cut. Use great care to avoid striking the bark with the hammer. Trees that are infested with scale should have all the branches and shoots washed or scrubbed, using for this purpose a mixture of soft soap and paraffin, at the rate of 1 oz. of soft soap to a gallon of water and one wineglass of paraffin to 3 gallons of soapy water. Keep the liquid thoroughly mixed during its application to the trees.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Treatment of *Phalænopsis* during Winter.—From the present time and all through the winter months it is a critical period with such varieties as *P. Schilleriana*, *P. Stuartiana*, *P. Aphrodite* (amabilis), *P. amabilis* (grandiflora), *P. Rimestadtiana*, *P. Sanderiana*, *P. leucorrhoda*, &c. Those plants that have made up their leaves and are now developing their flower-spikes, should be afforded water only after most careful examination, the roots and leaves being liable to disease if water be applied in excess, especially in cold or wet weather. It is not good practice to dip the plants in water, or otherwise to saturate the compost; but the plants should be examined every day, and whenever the surface of the sphagnum-moss is dry, lightly sprinkle it with water and around the sides of the baskets or pans, to which generally the roots cling. Do not permit any water to lodge in the centre of the growths or axils of the leaves. Use a fine-rosed watering-can, and employ tepid rain-water at a temperature of about 65°. This work should be done in the morning immediately the temperature of the house rises to between 65° and 70°. Young plants having only one or two leaves frequently produce flower-spikes, but it is not advisable to pinch them off if the plants are healthy, because they will invariably send up other flower-spikes later on, and sometimes they will do so from the centre of the growth, which is always detrimental to the health of the plants. It is preferable to allow them to expand their flowers, and when these are fully expanded to remove the spike. Strong, well-rooted plants will throw out very large and many-flowered spikes, but on no account let such spikes remain too long, or the plants may become permanently injured. If the spikes are stood in water in the house where the plants have been growing, the flowers will retain their beauty for a reasonable length of time. Now that the flower-spikes are growing fast and are very tender at their points, they should not be kept too close to the roof of the house, or the ends of the spikes may decay through being in contact with the cold air passing between the laps in the glass. Some of the green-leaved varieties, as *Phalænopsis speciosa*, *P. Luddemanniana*, *P. violacea*, *P. Marie*, *P. sumatrana*, &c., are still growing and rooting freely, but water must only be afforded to them in limited quantities, inclining to the dry rather than to the wet side. The leaves of these green-leaved species are very liable to injury from the direct rays of the sun shining upon them through the roof-glass, therefore even during winter these plants should be carefully protected, a piece of tissue being all that is necessary to shade them. *P. Lowii* and *P. Esmeralda* have passed out of flower, and, being deciduous in their native habitats, the plants will require but little water until growth recommences. While at rest both species require all the light possible, but during the growing season a moist shady position is preferable.

The temperature for *Phalænopsis* during winter should range from 60° to 70° according to the weather outside. A close, hot, moist atmosphere should be carefully avoided, employing a little top ventilation whenever the weather is favourable. This will assist to harden the leaves and keep them free from "spot." Cockroaches are extremely fond of the roots of *Phalænopsis*, and the various kinds of poison now in use should be employed to eradicate them. Slugs are sometimes troublesome, but they may easily be sought for and destroyed.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

The Rockery.—Do not permit fallen leaves and rubbish to accumulate or "damping" will occur, and some of the more tender species will be lost. Take advantage of the mild weather to remove some of the stronger-growing species which were planted to cover space until the more beautiful and tender species had become established. Fill the holes thus caused by affording such soil as will be suitable to the plants which remain. Plants which have been in pots during the summer may now be planted out. Woodland Ferns that were planted for shelter should be removed before they get too large; they abstract much nourishment from the ground, and thus rob the plants around them. Polygonum Brunonis and its varieties are very bright now. Plumbago Larpentæ is also flowering in this garden.

Double Daisies.—If the plants have not been taken up and divided, let this be done now. The red and white varieties should be cultivated for spring bedding, as they last a long time in flower. Daisies require a rich loamy soil.

Montbretias.—As soon as the tops have died down the bulbs may be lifted and divided one from another. Select the largest-sized bulbs for flowering next season, and let the others be planted in the nursery ground for future use. If the flowering-bulbs are to be planted in the same ground, it should be trenched first and some good rotten manure added.

Bedding Pelargoniums.—Caterpillars are very troublesome to rooted cuttings planted thickly in boxes. They must be picked off the plants by hand. Clear all decayed leaves away, and stir the surface of the soil occasionally. A fine day should be chosen for the affording of water to these plants, and care should be taken that the waste water may drain quickly away from the boxes. Afford plenty of air, and if a little heat be employed in the hot water-pipes it will prevent excessive damp. Old stoves laid in a warm frame will require to be cleaned, and the dead stems cut off, but these will need very little water.

Allernantheras.—These should be on a shelf near the glass in a moderately dry atmosphere, at a temperature of 60° at night. They will require care in the application of water.

Planting should be completed before the commencement of the new year. Rhododendrons and Azaleas are best moved now, and if the soil contains too much clay, plenty of peat or leaf-mould must be added. If any other Evergreens are not planted before the end of the year they had better be left until April. Examine trees that were planted last season, and remove the ties, putting others in fresh positions. If wire has to be resorted to in windy and exposed situations, old india-rubber piping should be used around the stems. Trees that are planted in grass should have a clear space of 2 feet left round the stem. This space can be kept clean and mulched until the trees are established.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Permanent Vines which were started at the commencement of the month have had the benefit of favourable weather; but it will be necessary on fine days to keep the temperature from rising too high. Ventilate the house freely, but close it early in the afternoon. Until the Vines are visibly active the temperature should be kept low; 50° to 55° at night, and 60° to 65° by day must not be exceeded at present. Keep the atmosphere of the house moist in bright weather, but it is unnecessary at this season to damp the surfaces in the house repeatedly. Cover outside borders with a thick layer of dry leaves, before severe weather occurs in order to afford protection from heavy rains and snow.

Vines.—After the favourable weather the fruit and wood of Vines will now be perfectly matured, and liberal ventilation must be employed to induce the Vines to rest. All late Grapes should now be cut, removing as much wood as possible,

laterals, and even leaves attached, for placing in bottles in the fruit-room. Put a few pieces of charcoal in the water, and the Grapes will keep in as perfect condition as upon the Vines. We have just bottled in the manner described more than 100 bunches of Muscat of Alexandria. The Grapes having been removed, cleaning operations and any renovation of the borders that may be necessary can be commenced. If the Grapes were allowed to hang longer some little difficulty would be experienced to ensure good preservation of the best varieties, and in the event of severe weather more fire-heat would be required to secure the necessary temperature of 50° than is good for the Vines. Where bottling is not practised, however, and the roots of the Vines are in outside borders, some sort of protection will now be necessary, of which corrugated iron shutters may be considered the best. Whatever the protection be, it should only be used where Grapes are hanging or early forcing has commenced. Excessive coverings on borders in winter or summer should be avoided. If Vines have a large extent of suitable border they will continue in a fruitful condition for a great number of years; but where it may be considered desirable to replace a portion of the border with fresh soil the work may now be undertaken and the result will probably be to induce increased root-action on the part of the Vines. Where interior and exterior borders exist it is desirable to renew but one border at one time; the effect upon the next season's crop will then be scarcely visible. In order to keep the roots as near to the surface as possible, carefully remove with a fork the inert surface soil sufficiently deep to lay bare a portion of the roots only, and the border may be reduced one half its width. I prefer to leave the front open to the influence of the weather for a season, covering the surface only with fresh turves, charcoal, half-inch bones, wood-ashes, and lime-rubble. In the following season, the front of the external border left open with roots protruding is slightly forked back, carefully preserving and trimming decayed or damaged roots and relaying them in the fresh front of whole turves. A layer of the other ingredients named above is placed between each layer of turves, the whole being made perfectly firm.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Forcing Asparagus.—Where strong, well-ripened crowns are available a start may now be made, and the measure of success will depend upon the conveniences there are at hand and upon the care exercised in the management. For early forcing I prefer structures heated by hot-water, because the temperature, which may be about 70° to commence with, can be more easily regulated, and be reduced when growth has started, or if the "grass" shows the least signs of growing weakly. But this need not deter those who have not this convenience from forcing Asparagus in frames heated by hotbeds, and for this purpose beds should now be made up, consisting of leaves and manure, well mixed together. A bed thus made will not produce violent heat at once, but it will continue to afford heat for a longer time than one composed wholly of stable-manure would do. When the bed has been made up, place the frame on it, and spread about 4 inches deep of soil over the face of the manure. As soon as the temperature has declined to below 80°, arrange the crowns closely together on the soil, and cover them with about 3 inches of sifted leaf-mould, or light soil free from lumps and slugs. It will depend upon the amount of moisture in the clumps and in the soil with which they are surrounded, whether water should be afforded directly. If the conditions are sufficiently moist to encourage growth, allow a few days to elapse before applying water; and before this is done let the water be warmed to the same temperature as that of the bed. If the plants have been procured from a considerable distance and have become dry, they will need water directly they are planted. Unless the crowns are thoroughly ripened, it is sometimes difficult to get them to start into growth so early, and it is therefore essential that extra care should be taken as

regards temperature and moisture both at the roots and in the atmosphere. If hot water is used for heating the structure, let the floors be damped, and syringe the walls and surface of the beds so as to produce nearly as possible that refreshing atmosphere which most of us have experienced after a shower of rain, following a few warm days during April and May. When substantial progress has been made, the temperature may be gradually brought down to 60° or below by ventilation or otherwise, and the results will be better than can be obtained from the greater heat, which will not be necessary at all in a month or two hence, as growth will then start freely in an atmospheric temperature of 60°.

Cauliflower, Lettuce, &c., in Frames.—So long as the weather continues to be favourable let these crops be fully exposed to the air.

Parsley.—If any Parsley has to be covered with frames these should now be put in position, so that the lights may be applied when required. If the plants are growing strongly and have become crowded, keep the foliage as dry as possible to prevent damping.

General Work.—Let all the ground from which summer crops have been cleared be cleaned and dressed in a similar manner to that described in previous Calendars; then apply a good dressing of manure, and dig or trench the land, as may be required by the state of the ground and the crop which it is intended to place thereon; but throw the soil up as roughly as possible, whether it be dug or trenched.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Cinerarias.—A position should be found for these near to the roof-glass in a cool-house or pit, where fireheat is only employed to exclude frost, or at the most to maintain a temperature of from 40° to 45°. Under these conditions the growth of the plants for the next eight or ten weeks will be steady and hardy, and there will not be that excess of weak, flabby foliage which results from the employment of too much fireheat during the sunless winter season. Moreover, the plants will be less troubled with aphids, as these do not breed freely in a low temperature. Plants in need of repotting may be afforded a compost consisting of three parts loam and one part leaf-soil, together with a little well-rotted manure and some coarse sand; but a very rich compost and light potting is not to be recommended, as it would tend to the production of gross foliage. Excellent plants for ordinary decorative purposes may be grown in 5-inch pots, provided that they are well supplied with manure-water, especially from the time that the flower-spikes begin to appear. If larger specimens are required, it will be necessary to afford the plants one or two shifts into larger pots, using for the final potting those having a diameter of 7 or 8 inches.

Bougardias.—These choice winter-flowering plants will now require a temperature of about 55°. Ranging in colour from pure white to bright crimson, the value of the varieties for cut-flower and conservatory decoration can scarcely be over-estimated. As good a position as possible should be given the plants, either in a light house or in a pit sufficiently deep to allow the plants to have a few inches of space between them and the glass. In dull, damp weather the atmosphere of the house should be kept somewhat dry, in order to check the tendency to damp-off which the flowers of the double varieties possess.

Clivias (Imantophyllums).—Now that these plants have completed their growth, water should be given less frequently. The decaying of the tips of the leaves so frequently seen at this season may be attributed to over-watering. Until the plants begin to show their flower-spikes it will only be necessary to afford them sufficient water to keep the foliage plump.

Agapanthus umbellatus.—Water should be withheld from these plants during the winter. When the soil in the pots is dry, the plants may be placed until the early spring in any cool structure from which frost is excluded.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Nov. 21 { National Chrysanthemum Society, Committee Meeting at Essex Hall, Strand.
WEDNESDAY, Nov. 23 { Annual Dinner of the National Chrysanthemum Society.
FRIDAY, Nov. 25 { Royal Botanic Society, General Meeting.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, by Protheroe & Morris, at 10.30.

WEDNESDAY NEXT—Roses, Azalcas, Rhododendrons, Iris, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY and FRIDAY NEXT—Unreserved Clearance Sale of Nursery Stock, at Tunbridge Wells Nurseries, Tunbridge Wells, by order of Messrs. Cripps, by Protheroe & Morris, at 11.30 o'clock.

FRIDAY NEXT—6,500 Dendrobium Phalenopsis Schroderae, and 600 Cattleyas, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —41°6'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 16 (6 P.M.): Max. 52°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 17 (10 A.M.): Bar., 30°5'; Temp., 47°. Weather very dull with fog.

PROVINCES.—Wednesday, Nov. 16 (6 P.M.): Max. 51°, South of England; Min. 45°, East Coast of Scotland.

Prof. Henslow. The announcement of the resignation of this gentleman as Secretary to the Scientific Committee of the Royal Horticultural Society will be received with real concern by all the members of that body, as well as by many who have had occasion to avail themselves of the services of the Committee. For twenty-five years Professor HENSLOW has, without fee or reward, acted as Secretary, and, by his uniform courtesy and readiness to impart information, has secured the esteem and gratitude of his friends and colleagues.

Mr. HENSLOW'S retirement is necessitated by the fact that he is about to remove from London to Leamington. Although his services as Secretary will thus be rendered impracticable, it is satisfactory to hear that he will still be able to give occasional lectures to the Fellows of the Society—lectures which are greatly appreciated for their interest, fluency and lucidity of statement.

At the meeting of the Scientific Committee on Tuesday last the following resolution was read from the Chair and passed by acclamation, the members standing:—

“RESOLVED THAT: This Committee, on hearing of the resignation of its Secretary,

the Rev. Professor HENSLOW, V.M.H., desires to place on record its sense of gratitude for the unvarying courtesy and marked ability he has shown in the disinterested discharge of his duties during a period of a quarter of a century. The Committee trusts that, although the Professor is compelled by circumstances to retire from the regular duties of his office, it may still be able to profit by his experience and to welcome him occasionally at its meetings.”

Mr. CHITTENDEN has kindly undertaken to discharge the duties of Secretary till the end of the current session.

BEGONIA “GLOIRE DE LORRAINE” (see Supplementary Illustration).—There are few gardens that possess greenhouses, we suspect, in which there is not at the present time a display similar to that shown in our Supplementary Illustration, which has been reproduced from a photograph taken in the garden of Mrs. TEMPLE, at Leyswood, Groombridge (gr., Mr. E. BRISTOW). The plant is so easily cultivated, flowers so profusely, and is at its best at the very dullest time in the whole year, that there is little wonder that it so soon became universally cultivated. There have already occurred several sports from this variety, such as those of “Mrs. Leopold de Rothschild,” “Turnford Hall” (which has flowers that are nearly white), and “Caledonia,” with pure white flowers, but so unlike to the type that few gardeners are able to cultivate it successfully. At a meeting of the Royal Horticultural Society on Tuesday last, several newer varieties were shown, but their resemblance to “Gloire de Lorraine” appeared very close.

THE REV. A. FOSTER-MELLIAR.—We regret to hear of the death on November 14, at Sproughton Rectory, near Ipswich, of this genial cleric and eminent Rose-grower. Mr. FOSTER-MELLIAR had been more or less of an invalid for some time, from disease of the kidney, which resulted in a paralytic seizure. In his college days at Oxford he was a famous athlete and cricketer, and within a few days of his death he was out shooting. To horticulturists, however, he will be best known as an ardent rosarian. He was not content with growing Roses, but he exhibited them, and with much success. His work *The Book of the Rose* is an excellent book, highly esteemed by rosarians, and probably, so far as practical information is concerned, the best all-round book on the subject. Mr. FOSTER-MELLIAR'S paper on “Pruning Roses,” read at the Rose Conference at Chiswick, afforded a good illustration of his merits as a teacher. To the *Journal of Horticulture* he was a frequent contributor, under the pseudonym of “W. R. Raillem”; and his loss, occurring so soon after the death of the Dean of ROCHESTER, will create a sad void in the ranks of the National Rose Society.

THE ROYAL HORTICULTURAL SOCIETY.—The show on Tuesday last was, as might have been anticipated, somewhat smaller than customary, but was, as usual, pretty and interesting. Even in the foggy weather which prevailed, the Hall was delightfully light. The details of the show are given in another column. Here we may express our satisfaction that a beginning was made in grouping the exhibits in a more effective manner than has been the custom. It was only a beginning, but we trust it will be followed up as opportunity permits, so that we may no longer be treated to long rectangular benches, covered or not with baize of hoary antiquity, on which the plants are placed with no attempt at grouping or harmony.

THE NATIONAL ROSE SOCIETY.—The Temple Gardens formed a singularly appropriate and convenient place for the great summer show of the Society. But neither historical appropriateness

nor present convenience any longer has weight with the Benchers. The Society has received an intimation that the gardens will no longer be placed at its disposal. A new locality had accordingly to be found. Various places were considered, and at length it has been determined that the Show shall be held in the gardens of the Royal Botanic Society on or about July 5 next. The “Temple Show” proper, held under the auspices of the Royal Horticultural Society, will take place as usual in the Temple Gardens.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL DINNER is announced for November 23, at 6.15 P.M., and will take place at the Holborn Restaurant, High Holborn, W.C. Mr. CHAS. E. SHEA, the Society's President, will preside on that occasion.

NATIONAL POTATO SOCIETY.—District Committees are to be formed in various counties to extend the influence of the Society and to promote the objects for which it was formed. An enquiry has been addressed to each member asking for information concerning the best disease-resisting varieties, the best Potatoes for heavy or light soils respectively, the best early, the best late varieties and the best for the main crop. One very important question relates to the comparative merits of particular varieties as regards flavour. The collection and tabulation of this information, as well as the results of the trials made in different counties, will show that exhibitions are by no means the only things the Society aims at.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.—This Society opened its autumn exhibition of Chrysanthemums and Fruits in the large glass structure at Cours-la-Reine, Paris, on Saturday, November 5. The show was opened by President LOUBET, who with Madame LOUBET and suite made a tour of the exhibits and freely expressed his admiration of them. Most entries were made in the Chrysanthemum section, which occupied nearly the whole of the central part of the building, and made a splendid show, being arranged in banks and beds with gravel walks between. Amongst the most notable displays were those of Messrs. VILMORIN ANDRIEU ET CIE., who occupied the dome at the entrance; and of Messrs. A. NONIN, CALVAT, and LEVEQUE beyond, which presented a magnificent array. The Grand Prix d'Honneur for Chrysanthemums offered by President LOUBET was taken by the Marquis d'AURELLES DE PALADINE (gr., A. Laurent), with a group of well-trained and large-flowered plants. There was a large number of novelties, of which many received Certificates. There were also several specimen plants trained in standard form, and containing on one stem as many as nine or ten distinct varieties, all ingeniously grafted on to one stock, and which, all being in flower together, presented a noteworthy spectacle. In addition to the Chrysanthemums there were groups of Begonias, tuberous and Gloire de Lorraine varieties, and Carnations, Clematis, Cyclamen, Violets, &c. The exhibits of fruits included some splendid Peaches, Pears, Apples, Grapes, &c. There were numerous examples of the growing popularity of fruit bearing on their surface portraits of celebrities, crests, &c. Messrs. SALOMON ET FILS exhibited a fine collection of Grapes, all well coloured and of large size, among which were some good bunches of Canon Hall Muscat and Black Alicante. The exhibit of H. WHIR was also very fine. There were two greenhouses allotted to Orchids, in which were some fine displays. Mr. G. LESUEUR took the “Prix d'Honneur” in this section with a comprehensive collection. The exhibit of M. A. MARCOZ was also very fine, and contained some magnificent plants of Vanda cœrulea and Cattleya aurea. In the same house was an interesting collection of Nepenthes and

Anthuriums exhibited by an amateur, Mr. JARRY-DESLOGES. There was also a collection of paintings on view. In the open-air were exhibits of greenhouse structures, boilers, and horticultural implements; also fruit-trees, by leading firms. The show closed on Sunday last. The attendance throughout was very good. The Society's next large show will be in May, 1905, and will be International. D. M.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

COLOUR AND FLAVOUR IN APPLES.—In the list of kitchen Apples given in your issue for Oct. 29, p. 298, I notice that the choice is rather from the growers' than the consumers' point of view. A list given from the view of the latter would be still more interesting. There are so many varieties of Apples possessing different qualities. Of the kitchen Apples some cook quite white and soft, like the Keswick Codlin, Lord Suffield, and Dumelow's Seedling, and have a pleasant acidity. Some turn brownish in cooking, like Warner's King; some do not form a pulp when cooked, like the Worcester Pearmain. The points to be ascertained seem to be just those that cannot be found in the catalogues of fruit-growers. It is rather provoking to find, especially when the years before one are fewer and "the sound of the grinding is low," that after waiting several years for the fruit, the Apples that were recommended as "beautiful Apples," whilst beautiful externally it is true, leave a sensation when you have eaten them as if you had swallowed stones, or others when cooked are almost as tough as leather. Like Adam, our knowledge of Apples is obtained by painful experience. The Apple that seems like sponge, the hard indigestible Apple, the so-called "bitter-sweet" or insipid Apple—these are the experiences of youth; and when one does get hold of a really nice pleasantly and juicy, fine-flavoured Apple, how difficult it is to obtain its correct name from the fruiterer! As we get on in years, when a soft-fleshed, juicy, digestible Apple becomes a necessity for health's sake, we see with envious eyes a juicy hard Apple with a fine flavour, like the King of the Pippins, demolished by sound teeth with evident gusto, a longing for a soft Apple comes over us, and the catalogues are consulted, and growers are asked what Apples possess the needed qualities, the reply may be Lady Sudeley for an early Apple, and Allen's Everlasting for a late one; but one learns too late that Lady Sudeley soon loses its flavour, and that Allen's Everlasting, unless severely thinned, is almost too small to bite; and when we find a nice soft and rosy Apple, such as Mainyard's Bearer, ripe in October, one looks in vain in catalogues for the name, or is at last told by experts that it is Margil, an Apple that the catalogues give as ripe from December to March. From the consumer's point of view it seems to me these are the following points to determine before planting Apple-trees:—

1. Is the tree an abundant and tolerably regular bearer?
 2. How long will the Apples keep under proper care?
 3. How does the Apple cook, white or brown, soft, or keeping its shape?
 4. Is it acid, fine-flavoured, or insipid when cooked?
 5. What varieties can be had in succession from July to March?
- As regards eating or dessert Apples:—
1. Is it a free-bearer?
 2. Is it of a fair size?
 3. Is it acid and fine flavoured?
 4. Is it soft and digestible?
 5. Is it prettily coloured?
 6. How long will it keep?
 7. In what month does it ripen?
 8. What varieties can be had in succession?

So far as market-growers are concerned I presume the qualities desired are somewhat different. A free-bearer, a fruit of handsome appearance, large size, not readily bruised, keeping well for a long time, very early or very late, as the case may be, represent probably the qualities desired. Indeed, I have been told by a wholesale fruiterer

that the very earliest Apples in the market, hard, green, and only of medium size, simply because they are early, fetch a good price, but they are known in the trade as "One-bite" Apples, for reasons that do not need explanation. A. N. Adamson.

THE CENSUS OF APPLES.—Everyone must agree with the Editor of the *Field* that all interested in fruit-growing are indebted to you for the valuable information you have collected for us about what Apples to plant. There is another point of only less importance, and this is in regard to the stock upon which the varieties should be grafted? The usual statement that standard Apples should be on the "Crab" (understanding by that the wild *Pyrus Malus*) I regard as wrong, as it is a very awkward one to "work," and is so slow-growing that unless caught very young, and grafted with a very vigorous variety, it would hardly make a good standard in an average lifetime. M. Charles Baltet in his well-known book advises "the seedling Apple"; but that does not carry one very far, as the "Codlins," "Pippins," streaked, bitter-skinned cider Apples, differ so much in timber, bark, leaf, flower, and fruit, that they can hardly have been derived from the same species; and very likely all are hybrids, like the Strawberry, Potato, Rose, &c. [True hybrids—i.e., first crosses between two distinct species—are seldom very fruitful. Ed.] There are in this country plenty of trees over 100 years old in full vigour and bearing, and thousands of standards of half that age that are, as we say, "worn out," while trees that never have grown into good standards are only too common. J. K. J.

CYPRIPEDIUM CHARLESWORTHII.—An unusually fine variety of this handsome Orchid was shown by Mr. J. Kirkpatrick, gr. to P. L. Hudson, Esq., Pampisford, at the Cambridge Horticultural Exhibition. The plant was a healthy specimen, and bore thirteen flowers of a remarkably dark purplish-violet tint. In contrast with ordinary light-coloured forms it was most conspicuous, and formed a prominent object in the beautiful group of Orchids and stove plants which gained a special Certificate of Merit for the excellence of culture shown throughout. R. L. C.

COLOURED GLASS FOR PLANTS.—With reference to Mr. Burbidge's enquiry respecting the effect of coloured glass on Vines, &c., I may remind him that the late Duke of Portland went to very heavy expense in glazing some vinerias at Welbeck with alternate rows of plain and violet glass. The results, however, were not such as to induce a continuance of the experiment. Probably Mr. Roberts would be able to supply fuller particulars. Chas. E. Pearson.

THE POTATO MANIA.—A craze has taken hold of a small section of farmers and gardeners in a marked degree. The "Potato craze," as a writer in the *Gardeners' Chronicle* truly terms it, is only a whit more rational than the Tulip mania from the fact that one can eat Potatoes. The outside Press is responsible for much of this, for they, in their greed for sensational head-lines and paragraphs, seem able to swallow whole much of the nonsense that is told them. It is alleged in some of these imaginative paragraphs that the value of the Potatoes staged at the National Potato Society's show at the Crystal Palace was estimated at half a million sterling, and that a ton of some especial kind, as those exhibited under a glass shade, would be worth five hundred millions sterling, and that one gentleman actually eat £500 worth at his dinner! Calmly considered, this is simply nonsense, and when it is sifted to the bottom it resolves itself into another instance of the easy gullibility of John Bull and his extraordinary hankering after the marvellous. Enquiring among those most likely to know, I learn that many of the novelties on the market are no better, some doubting whether they are as good as existing sorts. The much vaunted "Northern Star," has the great fault of supertuberation in a marked degree, while not a word is said about the flavour and cooking merits of any of these varieties, except that one gentleman asserted that the tubers cooked for his £500 meal tasted like good Potatoes,

white, mealy and fine-flavoured, as they decidedly ought to have been at the price. If the statements were correct, he could have claimed to have consumed at one meal vegetables that were worth more than their weight in gold! A rumour too is current that a Potato honoured, like the sirloin of beef, with Knighthood, and to which the Committee of the Royal Horticultural Society gave an Award of Merit, is nothing but a discarded kind, handsome but worthless—the International kidney under a new name. It is to be hoped that this is incorrect or that the Committee never tested it when cooked. *Experience.*

NATIONAL POTATO SOCIETY AND COOKED POTATOS.—Replying to both Mr. Bartlett and Mr. Engleheart, I may say that at the last Committee meeting of the National Potato Society it was decided to solicit the opinions of those interested in Potatoes as to what were the best Potatoes for various purposes, including table quality. The forms are now ready, and I shall be happy to send a copy to any applicant. Probably most people will agree with the Committee that this is much more likely to elicit useful information than a series of classes for cooked Potatoes at a show. It is good of Mr. Engleheart to give us his advice as to when to hold our exhibition, but I expect we shall still be so stupid as to let our subscribers settle the dates! Walter P. Wright, Postling, Hythe.

SAGINA PROCUMBENS IN GARDEN WALKS.—Your correspondent "F. S.," p. 322, can easily get rid of "*Sagina procumbens*" and all other weeds on paths by timely applications of small doses of common salt. Salt is a most thoroughly effective and safe application to apply for the killing of weeds. I have used it for years in preference to the more popular weed-killers lately introduced. The salt I prefer is finely-ground rock salt, as this is in my opinion much more potent than the white, and owing to its brownish colour its presence on the walks is not discernible. No heavy application is required, merely a thin sprinkling; but as to this a little experience is soon acquired. Immediately the salt is applied, it should be brushed in by the use of a new birch or ling besom. This operation serves to place the salt in immediate contact with the roots of the weeds and hastens the desired end. If the weather happens to be dry when the salt is put on, a light watering with a rosed pot, by dissolving it, helps to quicken the business of killing. Mosses, Lichens, *Sagina*, *Arenaria* and *Poa annua* are the weeds which generally give trouble on gravelled walks. Gravel which sets hard and continues hard is less liable to grow weeds than dirty inferior gravel which never thoroughly sets. When using salt or any of the more poisonous weed-killers, care must be taken not to apply it too near live edging, such as Box, &c. When paths are liable to become weedy it is best to have them edged with some kind of stone kerbing. I do not think "F. S." will be very successful with the "Painters' lamp burner," but should it be tried I for one would be pleased to hear of how much, or any, success. The presence of *Sagina* gives me no nightmare, as I have long ago learned how to "Togo" it to quick disappearance. W. Miller, Berkswell.

CARNATION AMERICA.—I am one who from the first has grown this excellent perpetual-flowering variety, and still find it to be the best of all scarlet-flowered Tree-Carnations, when all points are considered. To the good qualities enumerated by "E. M." on p. 267, and by Mr. J. Murray on p. 305, I may add that it possesses a vigorous constitution and is a true perpetual bloomer. I have a batch of plants which has produced good flowers during the past twelve months, excepting during July and August, when the plants were stood out-of-doors and the buds removed. As stated by Mr. Murray, the variety Glacier (or Mrs. Brooks, as it is now called) is indeed an excellent white companion to America, and we now require a good pink variety of the same class. A great point in the culture of the variety America is to take the cuttings in November or early in December, in order to allow time to stop the plants two or three times, as the variety does not possess such a free branching habit as do some of the older varieties. U. R. Fielder, North Mymms Park Gardens.

LÆLIA PRÆSTANS.

In the collection of the Marquis de Wavrin, near Ghent, there is, or has till recently been, in flower a variety of this plant with the lip deep slaty-blue bordered with white. It was bought by the Marquis from Messrs. W. Bull & Sons, to whom we are indebted for the opportunity of illustrating it (fig. 161). The Marquis informs us that his plant is at present small, but that he expects that when well cultivated the flowers

SOCIETIES.

THE ROYAL HORTICULTURAL.

NOVEMBER 15.—An ordinary meeting of the Committees of this Society was held in the Royal Horticultural Hall, Vincent Square, on Tuesday last.

One of the chief exhibits was a magnificent collection of Orchids, shown by G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water, Gloucestershire, of which a description will be found below.

the Duke of WESTMINSTER, Eaton Hall, Cheshire, and several other collections of fruit. No Award was made to a novelty, though several seedling varieties of Apples were shown.

Most of the fog had cleared away before noon. In the afternoon twenty-three new Fellows were elected to the Society.

Floral Committee.

Present: W. Marshall, Esq., Chairman, and Messrs. C. T. Drnery, Jas. Hudson, H. B. May, Jno. Green, J. A. Nix, R. C. Notcutt, R. Hooper Pearson, Chas.



FIG. 161.—LÆLIA PRÆSTANS, WITH DEEP SLATY-BLUE LIP BORDERED WITH WHITE.

will assume larger dimensions. In any case the lip is more decidedly blue than in any variety he has seen. "I have," continues the Marquis, "two other varieties of *L. præstans* with blue lips, one in particular is very remarkable for the size and perfect form of the flower. The lip in this case is lavender-blue edged with white. This variety was obtained from Messrs. Sander & Son, and was called *L. præstans* Queen Alexandra, this marvellous variety being really worthy of bearing the name of the gracious and good Queen of England—*de Wavrin*." The range in colour in this species is remarkable, and the presence of blue varieties is specially worthy of note.

The ORCHID COMMITTEE recommended Awards including three First-class Certificates and three Awards of Merit.

The exhibits before the FLORAL COMMITTEE included a number of new varieties of Chrysanthemums, but the Committee recommended an Award of Merit to only one of them. Two other Awards of Merit were recommended, one to a winter-flowering Carnation, and the other to a small-fruited Capsicum. There were collections of winter-flowering Begonias, Carnations, zonal Pelargoniums, and other miscellaneous plants and flowers.

Before the FRUIT AND VEGETABLE COMMITTEE there was a magnificent exhibit of Apples and Pears from

Jefferies, Chas. Dixon, W. Howe, H. J. Cathush, J. T. Bennett-Poe, R. W. Wallace, C. E. Shea, M. J. James, Geo. Paul, E. H. Jenkins, C. E. Pearson and James Walker.

MR. RICHARD DEAN.

The Chairman read a letter he had received from Mr. R. Dean, stating that he had been confined to his bedroom for the past eight days, and unless the great pain from which he suffers can be relieved Mr. Dean was afraid that he might not be able to attend the meetings of the Committee. On the proposition of Mr. Chas. E. Shea, seconded by Mr. Geo. Paul, it was unanimously agreed to send a letter of sympathy to Mr. Dean, who was elected a member of the Committee as long ago as 1868, and who has

since been one of the most regular attendants at its meetings.

Messrs. THOS. ROCHFORD & SONS, Turnford Hall Nurseries, Turnford, showed a variety of *Asparagus medeoloides*, in which the leaves were of lighter green colour than the type. The variety was named *aurea*; but the yellow colour was not sufficiently pronounced to obtain recognition from the Committee.

Messrs. HUGH LOW & CO., Lush Hill Park Nurseries, Middlesex, exhibited a group of Carnations, in which the variety Mrs. T. W. Lawson was conspicuous.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, exhibited a group of flowering plants in season, including excellent plants of *Begonia Gloire de Lorraine*, Mrs. Leopold de Rothschild, and several other varieties of the same type. Choice varieties of *Bouvardias* were included, amongst which King of the Scarlets was conspicuously effective. Two good plants of *Adiantum tenerum Farleyense*, and several specimens of *Poinsettia pulcherrima major*, a variety having deeper-coloured bracts than the type, completed the exhibit (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, had several plants of *Jacobinia coccinea*, in flower; but the feature of their exhibit was a collection of *Begonias*. These winter-flowering varieties, raised from crosses with *B. socotrana*, were brilliant. The variety Mrs. Heal, though one of the oldest, is nevertheless one of the best. Others included "Winter Cheer," *Agatha*, and *A. compacta*; *Julius*, a double pink-flowered variety; and *Success*, a deep red-coloured single variety. A new variety was shown in *Rosalind*, which has large flowers of the type of Mrs. Heal, but of rich pink colour. This was obtained from a cross between *B. socotrana* and a rose-coloured tuberous variety, and may become as popular as Mrs. Heal (Silver Flora Medal).

Messrs. H. CANNELL & SONS, Swanley, made one of their popular exhibits of sprays of zonal *Pelargoniums*. These flowers were exceedingly bright, and the forty varieties or so shown represent the best obtainable. Conspicuous were *Prince of Orange* (orange-red), *reticulata*, *Sir E. Cassel* (scarlet), *Queen of Italy* (pink), *Lady Warwick* (white with pink Picotee-like edge), *Snowstorm* (white), and others. There were also some choice double varieties shown (Silver Flora Medal).

Messrs. J. AMROSE & SON, Cheshunt, Herts, showed cut Roses, Ferns, Carnation flowers, Lily of the Valley, and other exhibits of a miscellaneous character. A pink-coloured Carnation named *Fascination* was much admired as a decorative variety (Silver Banksian Medal).

Messrs. W. CUTBUSH & SON, Highgate, Middlesex, exhibited hardy berried shrubs, such as *Pernettyas*, also some late-flowering perennial Asters, late-flowering border and rock-plants, &c., and a magnificent collection of cut flowers of Carnations in great variety. One of these is described under "Awards of Merit" (Silver Flora Medal).

Mr. J. R. BOX, Croydon, exhibited a group of winter-flowering *Begonias*.

Mr. L. R. RUSSELL, Richmond Nurseries, made an exhibit of a large collection of shrubs and Conifers in pots; these, including *Skimmia Fortunei*, misnamed *japonica*, and other berried plants, were suitable for furnishing flower-beds and window-boxes during the winter season.

Messrs. FELTON & SONS, 7, 8, and 9, Hanover Square, London, W., exhibited a group of "retarded" plants forced into flower. These included *Rhododendron* (*Azalea*) *molle*, *Lilium auratum*, *speciosum*, and *longiflorum*; *Lily of the Valley*, common *Laburnum*, *Jilac*, and *Spireas*. The firm also showed decorative varieties of *Chrysanthemums* and Carnations in vases; also flowering sprays of *Eucalyptus globulus*, and some specimen *Codieums*, &c. (Silver Banksian Medal).

CHRYSANTHEMUMS.

Messrs. W. WELLS & CO., Earlswood Nurseries, Redhill, exhibited a collection of *Chrysanthemums*, amongst which were the following varieties:—*Chelton* (a yellow sport from *Nellie Pockett*), *Rolinda K. Harding* (a large, spreading Japanese, of bronze and yellow colours), *John E. Dunne*, *J. H. Doyle*, Mrs. G. Denyer (incurved), Mrs. Barnard Hankey (incurved), and *Old Gold* (a very richly-coloured flower, that would be excellent for decorative purposes). Good single-flowered and decorative varieties were also shown, and the best Japanese will be found described under "Awards of Merit." The group was awarded a Silver Flora Medal.

Other new *Chrysanthemums* were shown by Mr. W. SEWARD, Hanwell, who sent plants of *Elthorne Gold*, a decorative variety, with smooth florets of pure yellow colour, and others; Messrs. GEO. WILLIAMS & CO., Cardiff, showed a rather rough-looking Japanese variety, named *Geo. Williams*; Mr. A. NOBBS, Beech Hurst Gardens, Haywards Heath, had a small-flowered single variety named *Annie*; R. H. BATH, Ltd., Floral Farms, Wisbech, had an incurved sport from *Globe d'Or*, and an excellent yellow-coloured market variety of Japanese named *Guinea Gold*. Mr. WALTER JINKS, Knowle Green House, Staines, showed a crimson Japanese with silver reverse named *W. Wilson*. G. FERGUSON, Esq., The Hollies, Weybridge (gr. Mr. Smith), exhibited upwards of a dozen single-flowered varieties, all very pretty, but which were thought not to be improvements on existing varieties.

AWARDS OF MERIT.

Carnation Lord Charles Beresford.—The flowers of this winter-flowering variety have a white ground feathered with bright reddish-pink colour, the general effect being one of pink-and-white. The flowers are nearly 2½ inches across, have good petals, and very seldom burst the calyx. They are moderately fragrant. Shown by Messrs. W. CUTBUSH & SONS.

Capsicum annuum var. conoides.—An effective, small-fruited *Capsicum* of which a plant 2½ feet high in a 4½ in. pot was shown by J. GURNEY FOWLER, Esq., Glebelands, South Woodford. The plant as shown had three or four stout stems and produced a flat table-like top upon which the fruits, being erect and above the small lanceolate leaves, produced considerable effect as viewed from above (Award of Merit).

Chrysanthemum Dora Stevens.—This is a large Japanese flower, in which the florets reflex sufficiently to display the bright reddish-purple colour on their upper surface, whilst the centre of the flower as shown was bronze-coloured owing to the younger florets being slightly incurved. Of the many varieties submitted to the Committee, this appeared to be the most distinct. It was shown by Messrs. WELLS & CO., Earlswood, Redhill, Surrey (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, Norman C. Cookson, R. Brooman-White, W. Boxall, W. H. Young, W. H. White, G. F. Moore, R. G. Thwaites, T. W. Bond, J. Colman, F. Wellesley, F. W. Ashton, H. Ballantine, J. Wilson Potter, and W. Thompson.

There was a very fine show of Orchids, the meeting being specially marked by the grand group exhibited by G. F. MOORE, Esq., Bourton-on-the-Water, Gloucestershire (gr. Mr. Page), and which in extent, quality, perfection of culture, profusion of bloom, and excellent arrangement, eclipsed any which had been previously exhibited in November. The Committee unanimously awarded the large Gold Medal of the Society, and recommended that the Lindley Medal should also be given for extraordinary excellence, especially in the matter of culture. The group occupied the whole of the wide staging at the end of the Hall, and it was most elaborately arranged, the back being interspersed with fine Palms, Crotons, Bamboos, &c., and the whole set in green moss and small Ferns. Throughout were a great number of *Cypripediums*, but the collections of them were broken by clumps of *Dendrobium Phalaenopsis*, fine *Oncidium varicosum*, a number of good *Cattleya labiata*, and other coloured species, one of the most elegant and brilliant being the scarlet form of *Epidendrum* × *O'Brienianum*. To bring such a vast collection of rare plants from Gloucestershire in such perfect condition was a great feat, well worthy of the praise and awards bestowed. Some 400 specimens were in the group, the *Cypripediums* forming the greater part, the *C. insigne* varieties alone contributing 120 distinct forms, many of them equal to rank with the fine *C. insigne* Harefield Hall, a specimen of which bore three flowers. The yellow forms were nearly all represented, *C. i. Sanderae* showing over a dozen blooms. *C. i. Dorothy*, eight, and others several each. Some of the most beautiful were *C. insigne montanum* *marginatum*, *C. i. Agathe*, *C. i. Kathleen*, *C. i. Bowsto*, *Gem*, *C. i. Ethel Cypher*, and *C. i. sylhetense giganteum*, which secured an Award. *C. i. Oddity* had remarkable flowers with three lips, the variation being proved to be constant. Others noted were *C. × Actæus* *Chardwar* variety, *C. × Blanche Moore*, a model flower showing *C. insigne*; *C. × Leeanum giganteum*, magnificent

and the best of the other forms; *C. × Lathamianum giganteum*, *C. × microcheilum*, *C. × Olivia*, *C. × Nandii*, *C. × Priam*, and a host of other fine hybrids. The *Dendrobium Phalaenopsis* included the pure white *D. P. hololeuca*, *exquisitum* (bright claret-rose), *rubescens* and *highburyense*. One of the most interesting specimens was *Phaio-Cymbidium* × *chardmarensis*, with bright yellow flowers and reddish-purple, yellow-veined labellum.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for a fine group of showy hybrid *Cattleyas* and *Lælio-Cattleyas*, among which were the new *Lælio-Cattleya* × *Æguia* (*L. Perrinii*) × *C. Hardyana*, with lilac-tinted sepals and petals and purple lip; forms of *L.-C. × Decia*, and other *L. Perrinii* crosses; *L.-C. × leucoglossa*, *L.-C. × blechleyensis*, *L.-C. × Tenos* (*C. Bowringiana* × *L.-C. × Nysa*), *Cattleya* × *Wendlandi*, &c.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured a Silver Flora Medal for a fine group, in the centre of which were six richly-coloured *Lælio-Cattleya* × *luminosa*. With them were *L.-C. × Violetta* (a very fine flower), *L.-C. × blechleyensis*, several good *Cattleya* × *Vulcani*, *C. × Portia*, *C. × Fernand Denia*, *C. × Clarkie*, and *Lælia* × *Helena*. Among the *Cypripediums*, *C. insigne* *triseptalum* had the lower sepals enlarged and finely spotted; *C. × Milo*, forms of *C. × Leeanum*, *C. × Hitchinsiae*, were good. *Vanda cœrulea*, *Lycaste* × *Tunstilli*, and *Trichopilia suavis* were also shown.

Messrs. SANDER & SONS, St. Albans, received a Silver Flora Medal for a good group, the best plants in which were *Cypripedium* × *Helen II.* var. *Fascinator* (*insigne* × *bellatulum*), a good cream-coloured flower, finely marked with purple, and *C. × Mary Beatrice* one of the finest of hybrid *Cypripediums*. Other forms of *C. × Helen II.* were shown, also *C. × Orion* var. *bella* (*concolor* × *insigne* *Sanderae*), a pretty cream-white flower densely spotted with purple; forms of *C. insigne* and *C. × Leeanum*, hybrid *Calanthes*, the finely-coloured *Cattleya labiata* *Edward VII.*, and other showy kinds.

Messrs. HUGH LOW & CO., Enfield, were awarded a Silver Flora Medal for an effective group in which were the fine white *Cattleya labiata* *Amesiana* and *C. l. Reedleyensis* (see Awards); also *Cattleya* × *Maronii*, *C. × mollis*, *C. Dowiana*, *Lælio-Cattleya* × *Decia* and the rare *L.-C. × Decia alba*, *L.-C. × Statteriana*, *L.-C. × Lady Rothschild*, &c.; *Cypripedium* *insigne* Harefield Hall with four fine flowers, *C. × Tityus*, *C. × King Carlos* (? *Charlesworthii* × *Lathamianum*) with showy rose-blotched upper sepal, and others.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Cattleya labiata* *Minnie* and *C. l. Westfield* variety, two large and finely-coloured forms; *Lælio-Cattleya* × *Norba superba*, *Cypripedium* *insigne* Mrs. F. W. Moore, and *C. i. citrinum* *Truffautianum*, two good yellow forms.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), showed *Cypripedium* × *Niobe*, *Oakwood* - raised variety, with several handsome blooms; *C. insigne* *Sanderae* *Oakwood* seedling, *C. × Actæus punctatissimum*, *C. × A. aureum*, the very finely-coloured *Cattleya labiata* *oakwoodensis* (with many flowers, Cultural Commendation), and *Odontoglossum* × *Andersonianum* *Crawshayanum* (see Awards).

DREWETT O. DREWETT, Esq., Riding Mill-on-Tyne (gr. Mr. Renwick), sent six seedlings, raised between *C. insigne* *Maulei* and *C. i. punctatum* *violaceum*.

C. J. LUCAS, Esq., Warnham Court (gr. Mr. Duncan), showed *Sophro-Cattleya* × *warnhamensis* (*C. amethystoglossa* × *S. grandiflora*) with pretty rose-coloured flowers; *Lælio-Cattleya* × *Angela* (*L.-C. × exoniensis* × *L. præstans*); and *L.-C. × Cordelia* (*L. Dayana* × *L.-C. × T. W. Bond*).

Mrs. HOLLOND, Womham, Bampton (gr. Mr. Austin), sent a flower of *Cypripedium* × *Nina E. Hollond* (*insigne* *superbum* × *Lathamianum*).

Mrs. NICKALLS, Pattison Court, Redhill, showed *Stanhopea oculata*.

Mrs. T. FIELDEN, Tadeaster (gr. Mr. Clayton), sent a good specimen of *Cattleya labiata*.

FRANK A. REHDER, Esq., Gipsy Hill (gr. Mr. Norris), sent *Cypripedium* × *Hitchinsiae* var. *Frank Rehder* (*insigne* *Chantini* × *Charlesworthii* *album*); *C. × Ernesto*, for which he had previously received an Award of Merit, and *C. × Adrastus inversum*.

W. THOMPSON, Esq., Walton Grange (gr. Mr. W. Stevens), showed *Odontoglossum crispum* *William Stevens*, a finely-blotched variety raised at Walton

Grange four years ago (seed sown August 27, 1900), by crossing a fine rose-tinted crispum with a good blotched form. The spike had been restricted to prevent the ill effects of flowering in a small state, and consequently the plant was not available for an Award.

Messrs. HOOLEY BROS., Litterne Park, Southampton, showed two white forms of *Cattleya labiata* with slight pink tint on the lip; other good coloured varieties, *Cypripedium insigne* Sanderre, &c.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium × *Niobe Westonbirt* var., from Capt. G. L. HOLFORD, Westonbirt, Tetbury (gr., Mr. H. Alexander).—A very fine flower, much rounder and more beautiful than the original, the circular dorsal sepal being finely marked with purplish-rose, the white ground colour showing in places between the veining and on the margin.

Cypripedium × *Helen II.* var. *Fascinator* (insigne × bellatulum), from Messrs. SANDER & SONS, St. Albans.—A pretty hybrid formed much like *C. bellatulum*. Flowers yellowish-cream-coloured finely marked with purple, the colour being darkest on the dorsal sepal.

Odontoglossum × *Andersonium Crawshayanum*, from NORMAN C. COOKSON, Esq. (gr., Mr. H. J. Chapman).—Flowers approaching that of *O. crispum*, white tinged with rose and richly blotched with dark-reddish-purple. Mr. Cookson also showed the painting of it taken when previously flowered and in which the flower was smaller and the ground colour yellow. Good cultivation had brought out *O. crispum* in it markedly.

AWARDS OF MERIT.

Cypripedium × *triumphans magnificum* (Sallieri × *œnanthum superbum*), from Captain G. L. HOLFORD (gr. Mr. Alexander). A great advance on the original, to which an Award of Merit was given in 1894. Dorsal sepal white in the upper part, the lower having a green ground heavily blotched with dark purple blotches changing to rose colour upwards. The rest of the flower of a rich chestnut-brown colour and with a shining surface.

Cypripedium insigne sylhetense giganteum.—From G. F. MOORE, Esq. (gr. Mr. Page). A very large flower of the fine shape of the old form and with a broad round dorsal sepal showing much white in the upper half.

Cattleya labiata Reddleyensis.—From Messrs. HUGH LOW & CO. Flowers white with faint pink tint on the lip, which has light orange markings in the tube.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq. (in the Chair); and Messrs. W. Poupart, Geo. Wythes, Owen Thomas, J. Jaques, G. Reynolds, W. Pope, Geo. Kelf, Horace J. Wright, H. Parr, S. Mortimer, W. Bates, George Woodward, F. Q. Lane, A. Dean, and James Gibson.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited fruits of two attractive-looking dessert Apples. One was from a cross between Ribston Pippin and Peasegood's Nonesuch; and another, named Marquis of Lansdowne, from a cross between the varieties Bismarck and Cornish Gilliflower.

Mr. GEO. HAMMOND, Pilgrim's Hatch, Brentford, exhibited some fruits of an Apple named Nursery Pippin; and Mr. W. J. AMBROSE, The Nurseries, Cheshunt, again exhibited fruit and foliage of Grape Melton Constable.

A noteworthy exhibit of "Christmas" Rhubarb was made by Messrs. SUTTON & SONS, Reading. The stems were nearly 2 feet long, and were gathered on November 14 from a position in the open air, where no protection had been afforded. This variety, it may be remembered, was introduced from the Antipodes, and its natural season of growth there would be at about November.

An excellent exhibit of fruits was made by his Grace the Duke of WESTMINSTER, Eaton Hall, Cheshire (gr., Mr. N. F. Barnes). The exhibit was arranged with good effect over a large table covered with a white cloth traced with coloured foliage, &c. In the centre were several trumpet-shaped glasses containing single-flowered Chrysanthemums. The Apples and Pears being arranged on plates and dishes hidden with Vine foliage appeared beautiful, and all the specimens were remarkable for large size and brilliant colour, some of them having apparently been produced under glass. Fruits of Apple Gascoyne's Scarlet Seedling were unusually fine, and Doyenné du Comice Pear was also superb. In addition to the large number of Apples and Pears there were half-a-dozen fruits of Melon, three

bunches of Muscat of Alexandria, and an equal number of bunches of Black Alicante Grapes (Silver-gilt Knightian Medal).

Mr. W. E. WALLACE, Eaton Bray Nurseries, Dunstable, exhibited about sixty dishes of Apples. These were good specimens, which showed excellent development and good colour (Silver Banksian Medal).

Another exhibit of Potatoes was made at this meeting, Mr. R. W. GREEN, Wisbech, contributing tubers of thirty varieties in punnets.

EDWARD S. GODSELL, Esq., Cameross House, Stroud (gr., Mr. W. Hammond), contributed twenty-seven excellent bunches of Grapes of the varieties Black Alicante, Muscat of Alexandria, and Lady Downes'. The award of a Silver Banksian Medal was certainly not more than equal to the excellence of the exhibit.

A few dishes of Canadian Apples were shown by Miss CLOSE, some from an experimental farm at Ottawa, and others from a Mr. MARTIN's farm in Nova Scotia. Some of the fruits were like the variety Hoary Morning, and all were well-coloured specimens, though not specially remarkable.

J. T. BENNETT-POE, Esq., Holmewood, Cheshunt (gr., Mr. Downes), exhibited five large bunches of Grape Mrs. Pince.

Four very large pale yellow-coloured fruits of Pear Charles Ernest were shown by Mr. GEORGE WOODWARD. This variety is somewhat like Pitmaston Duchess in appearance only, and was illustrated in the *Gardeners' Chronicle*, October 31, 1903, p. 301.

THE BRITISH GARDENERS' ASSOCIATION.

MEETING IN IRELAND.

OCTOBER 22.—At a meeting of the Irish Gardeners' Association, held on the above date, in the XL Hall, Grafton Street, Dublin, Mr. F. W. MOORE, Curator of the Glasnevin Botanic Gardens, in the chair, Mr. F. W. BURBIDGE, M.A., Curator of Trinity College Botanic Gardens, in the course of his lecture on "Gardens and Gardeners," said:—"Concerning ourselves as gardeners, you cannot organise a show of gardeners, but is it impossible to 'grade' and lift gardeners as a class or body to a higher plane? Is it impossible to give the gardener a higher social status than he got from average society? All the learned professions seemed to have a stone wall round them. One reason was, of course, that professional men were all college men, and educated at the University, and they got social status before they entered into their profession at all. It was impossible for most gardeners to get an education of that kind; but there was a beginning. There were colleges in connection with the Universities now starting at which gardeners were being trained, such as at Reading, Durham, Edinburgh, and other places, and the chances were that the gardener would rise in the social line in that way. The head gardener's social position was legally that of a domestic servant. Mr. Burbidge thought that was a grievance. Another thing was that at the present time any man might call himself a gardener, no matter what his education might, or worse still, might not have been. Now, he asked, was it wise, was it desirable, was it right, that gardeners as a class should rest content to be safeguarded by a broken wall and an open door? Should they, as gardeners, suffer the bad effects of competition, of free trade, which was not fair trade? and was not some sort of co-operation and protection desirable? Nothing in the shape of an aggressive, domineering trade union would ever suit gardeners. It was possible to found an association that would secure the interests of the worker and also the interests of the employer. The experiment of founding such an association in England had already been taken up under the name of the British Gardeners' Association. The lecturer then dealt in detail with the objects of this Association, which, briefly put, were to compile a register of gardeners and gardens, and to regulate wages and working hours, &c. It was proposed to establish a branch of the Association in every large town wherever there were sufficient gardeners to form one. This was, so far as Mr. Burbidge could remember, the first real attempt to organise gardeners of all classes under one flag, and if it proved a success, as he felt sure it would do, there was no doubt that it would not only elevate the social status of gardeners and lead to their material advancement and protection, but also safeguard the interests of employers. He asked the officials of the Association to consider the claims of the newly-formed organisation."

We are informed that an evening has since been appointed by the Association for consideration of the question.

LINNEAN.

NOVEMBER 3.—Prof. W. A. HERDMAN, F.R.S., President, in the Chair. The President, in greeting the Fellows on the opening of the session, alluded to the welcome addition to the Society's rooms, by the acquisition of the quarters formerly occupied by the Post Office, and the consequent changes in the Library and Council Room.

The Resolution of Council of June 2, "that the existing bye-laws of the Society be, and they are hereby repealed, and that the following bye-laws be established in lieu thereof," was then introduced. The Council had, in the new bye-laws, made as few changes as possible, preserving the original text as far as practicable. He took the feeling of the meeting to be that the bye-laws should be voted upon, as a whole, and on that basis the ballot would be taken. The result was—in favour 72, against 4; whereupon the President declared the new bye-laws to be confirmed by a large majority.

Mr. G. CLARIDGE Druce showed specimens of a new British grass, *Coeleria valesiaca*, Gaud., which he had found in the herbarium of Dillenius at Oxford, and had recently refound in the original locality at Erent Down, Somersetshire.

The Rev. John Gerard, S.J., brought specimens of a prolificus Plantain (*Plantago major*) from the neighbourhood of Clitheroe, Lancashire. He drew attention to the figures of the plant in Lobel and Pena's *Adversaria* and Dodoens's *Pemptades*, which latter block reappeared in Lobel's *Observationes et Icones* and in Johnson's edition of Gerard's *Herbal* in 1633; the old herbalists spoke of it as the "Besome Plantain, with spiky tufts." He also drew attention to later figures in Masters' *Teratology* and the *Gardeners' Chronicle*, ser. II. xiii. (1880), p. 364, figs. 65, 66. The point of interest seemed to be that this prolificus tendency was transmitted by seed, for a seedling of the original plant was passed round.

Mr. Frank CRISP, Treas. L.S., brought for exhibition a flower of *Schubertia graveolens*, Lindl., an Aselepiad, which, deprived of its corolla and a portion of its calyx cut away, viewed from the side, presented the genitalia in the shape of a skull. Prof. E. B. POULTON briefly commented on this exhibition, as an illustration of mimetic resemblance, paralleled by certain Lepidopterous markings.

The President then gave the substance of a communication, "A Note on some Points in the Structure of the Gill of the Ceylon Pearl-Oyster," his remarks being elucidated by lantern-slides.

A paper by Mr. A. F. BROWN, "Notes on the 'Sudd' Formation of the Upper Nile" (communicated by Mr. C. H. WRIGHT, A.L.S.), was read in abstract by the latter.

The tract of country between Lake No and Sbamba, a military post on the left bank, 266 miles from that lake, is that included in the present notes. The author gives a list of the plants forming the mass of vegetation, its probable growth, and favoured by the silt brought down by the White Nile, helping to block the shallow channels. The Irrigation Department of Egypt is successfully attacking this problem and liberating the volume of water in these swamps for the lower reaches of the Nile.

The last paper was on "Bryozoa from near Cape Horn," by Arthur Wm. WATERS, F.L.S., F.G.S., and was introduced by the Zoological Secretary.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the last meeting of the Committee sixteen new members were elected. The death certificate of Mr. James Tivendale, No. 370, was produced, and the amount standing to the credit of the late member was directed to be paid to his nominee. Six members were reported on the Sick Fund.

LOUGHBOROUGH CHRYSANTHEMUM AND FRUIT.

NOVEMBER 5.—The thirtieth annual exhibition of the above Society was held in the Town Hall on the above date, and was the most successful ever held by the Society.

In the open classes the cut blooms were of large size and of good finish.

LORD PERCY ST. MAUR took 1st prize for twenty-four incurved Chrysanthemums, showing good flowers of Mme. Ferlat, J. Agate, Hanwell Glory, Chas. Curtis, Duchess of Fife, Mrs. John Seward, William Neville, and Ernest Cannell. Mr. JOHN SMITH, Derby Road Nurseries, followed very closely with well-finished but smaller flowers.

In the classes for Japanese varieties, the competition was very keen; six entries in that for twenty-four blooms made a fine display. Mr. MARSH, of Barkley Hall, secured 1st honours, Mr. LILY, of Gaddesby Hall, being placed 2nd, and Mr. J. SMITH, 3rd.

The vase classes for Japanese varieties were well filled. Lord PERCY ST. MAUR was awarded 1st, and

Mr. J. SMITH, 2nd prize, the best flowers being Bessie Godfrey, F. S. Vallis, and Elsie Fulton.

The Society encourages the decorative single type of Chrysanthemum, to which they allot three classes. Mr. SMITH was again successful, taking all three 1st prizes with very fine fresh flowers of 'Pink Perfection', Daisy Brett, Annie Holden, Earlwood Terra Cotta, Snowdrift, and Smith's Perfection.

The Society's most valuable prizes are offered for groups of plants, and in these Mr. SMITH was again prominent.

In the class for miscellaneous groups the same winner had a strikingly arranged exhibit.

In the fruit section, which is always strong at Loughborough, the Apples and Pears were well coloured, and competition was very keen in the classes. Most of the prominent local growers exhibited well. Mr. BIRD, of Walton, was prominent in the classes for Apples and Pears. Mr. SWANICK carried off both the prizes for Grapes.

The exhibits of cut blooms of Japanese Chrysanthemums, open to gentlemen gardeners, were almost equal to those in the Open classes.

The annual dinner of the Society was held in the evening at the King's Head Hotel, Mr. D. Roberts presiding. J. F. S.

ULSTER HORTICULTURAL.

NOVEMBER 8, 9.—This flourishing Society held its annual Chrysanthemum exhibition in Belfast, and it was admitted to be decidedly the best ever held under the auspices of the Society. Apart from the purely horticultural side, this show is one of the social events of the year in Belfast, the Lord Mayor for the year being also President of the Society, and the opening ceremony being undertaken by one of the leading ladies in Ireland. This year the Countess Grosvenor opened the exhibition.

The entries numbered 1,249, this being an increase of 400 over the number last year.

Both groups of plants and specimen cut blooms Chrysanthemums were exceedingly fine, the premier prizes being won by J. MILNE-BARBOUR, Esq., and A. D. LEMON, Esq., J.P.

In the classes for cut blooms the competition was very keen, and in that for twenty varieties (three blooms of each), staged in vases, Capt. STIRLING-MAXWELL of Dunblane, Scotland (gr., T. Lunt), was awarded 1st prize, being closely followed (as last year) by Mr. JOHN JAMESON, Dublin (gr., J. McKellar), who was nevertheless very successful in other classes in the show.

Amongst the prize-winners in this section were the Marquis of DOWNSHIRE, Lord DUNLEATH, Lord ASHBROOK, and other local growers, notably T. H. TORRENS, Esq. (gr., J. Robinson), who not only won 1st prize in the class for forty-eight Japanese blooms, but was also 1st in that for twenty-four incurved blooms, in not fewer than eighteen varieties.

A great feature of the show were the splendid exhibits of fruit, particularly Apples, which have never before been shown so well in Belfast, nor in such numbers as on this occasion.

The Braitwaite Cup for the best table of dessert fruit, twelve distinct varieties, was won by the Marquis of DOWNSHIRE (gr., Mr. T. Bradshaw). 2nd, Lieut.-General PAKENHAM, who also secured the Challenge Cup for twenty-four dishes of Apples, besides winning in several of the classes for single dishes.

Other leading prize-winners in this section were the Viscount DUNCANNON, Lord ASHBROOK, Lady E. BURY, the Earl of MEATH, J. JAMESON, Esq., and others.

Classes for table plants, Ferns, Palms, flowering plants, &c., also classes for vegetables, were all well filled.

The Nurserymen's exhibits were on a magnificent scale, Messrs. ALEX. DICKSON & SONS, Mr. HUGH DICKSON, Mr. SAMUEL M'GREDY, Messrs. F. SMITH & Co. (florists), and others, all showing groups of plants, flowers, and fruit, which were a source of great attraction to the enormous crowds which attended on both days.

We congratulate the energetic and hard-working Committee and Secretaries on a very successful exhibition.

THE SOUTHEND-ON-SEA AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 8, 9.—This Society held its annual exhibition of cut flowers, plants, &c., in the Victoria Hall, Southend, on the above-mentioned dates, and the show was a decided success. The cut blooms, of both Japanese and incurved varieties, were excellent in every way; and they reflected credit on the growers, the committee of management, and the energetic and courteous honorary secretary, Captain Burnham.

PLANTS.

In the class for a group of Chrysanthemums in pots, Mr. Pidgeon, gr. to G. BROWN, Esq., Milton House, Southend-on-Sea, was 1st with really well-grown plants, furnished from the pots upwards with fine

healthy foliage, and carrying large blooms of much substance and good colour; Mr. Bines, gr. to Messrs. GARDNER BROTHERS, York Road Nursery, Southend, being 2nd.

There were three groups of miscellaneous plants arranged for effect, Mr. BINES taking 1st honours with a very tastefully-arranged group. Mr. SCOTT, manager, Leigh Nursery Co., Leigh-on-Sea, also showed well in this class.

CUT BLOOMS.

Mr. J. Burles, gr. to J. TABOR, Esq., The Lawn, Rochford, practically swept the board in these classes, taking nine prizes out of a possible ten prizes in both open and local classes. He also had the best bloom in the show in a grand specimen of F. S. Vallis, in addition to winning a Silver Cup and medals.

In the class for twenty-four blooms (Japanese), Mr. BURLES was 1st again with a fine, even, fresh lot of blooms, among which were grand specimens of Miss Stopford (7 inches in depth and of proportionate width), Bessie Godfrey, Godfrey's Pride, Edith Shrimpton, and Duchess of Sutherland. Captain BURNHAM, The Gables, Leigh Park, Leigh-on-Sea, was 2nd.

Captain BURNHAM took first honours in the class for twelve incurved blooms with uniformly large, solid, fresh, well-finished blooms of, among others, Mr. J. Seward, Mr. H. J. Jones, C. H. Curtis, Col. Keke-wich and Countess of Warwick. Mr. Epps, gr. to Mrs. MILLAR, Belfares, Leigh-on-Sea, was 2nd.

FRUIT

was not extensively shown. Mr. MURRELL, High House, Barling, had the best six dishes of culinary Apples, showing good examples of Peasgood's Nonesuch, Warner's King, Gloria Mundi, Lord Derby and The Queen. Mr. ROBERT MAY was 2nd, staging fine specimens of Golden Noble and Beauty of Kent. The last-named exhibitor had the best six dishes of dessert fruits, showing Cox's Orange Pippin, King of the Pippins and Mannington's Pearmain. Mr. EPPS also showed well in these classes.

NON-COMPETITIVE EXHIBITS.

Messrs. MARTIN RAY & SONS, Leigh Road Nursery, Southend-on-Sea, made a grand display of artistically arranged plants and cut-flowers, including three arcades, arranged on different levels and tastefully garnished with flowers and bright-coloured foliage. Two parcels of Ray's Perfection Tomato were deposited in the groundwork of flowers and plants.

Messrs. GARDNER BROTHERS made a fine display of foliage and flowering plants on the other side of the platform. This capital group included a choice lot of stove and greenhouse plants, arranged to the best advantage.

DUMFRIESSHIRE AND GALLOWAY HORTICULTURAL.

NOVEMBER 9.—The revival of the Chrysanthemum shows in Dumfries last year, under the auspices of the Dumfriesshire and Galloway Horticultural Society, has had a good effect in improving the cultivation of the flower in the district, if one may judge from the greatly improved quality of the cut flowers exhibited on the 9th inst. Plants, although better than last year, were not of first-class quality. Fruit, vegetables, and other supplementary classes were generally good, and an improvement was noticeable in the decorative arrangements, such as baskets, vases, and épergnes. Few nurserymen sent non-competitive exhibits, but a feature of these was the stand of florist's work and Chrysanthemum blooms from Messrs. G. FAIRBAIRN & SON, Carlisle, to whom a Certificate of Merit was awarded. Messrs. JAS. SERVICE & SONS, Maxwelltown, Dumfries, showed a number of the best varieties of Potatoes. Mr. JAS. KERR, Dumfries, also sent a large collection of Potatoes, raised by the late Mr. W. Kerr and himself. Messrs. SERVICE and Mr. KERR were also awarded Certificates.

In the Open classes for Chrysanthemum flowers the best collection of twenty-four came from Messrs. G. FAIRBAIRN & SONS, Carlisle; Messrs. JAS. SERVICE & SONS were 2nd. Messrs. FAIRBAIRN showed the varieties Graphie, Lord Lallow, Mrs. G. Mileham, Madame Waldeck-Rousseau, Charles Davis, Madame G. Henry, Mrs. J. Lewis, Lady Hanham, M. L. Remy, Vivand Morel, Pride of Exmouth, Mrs. Barkley, and G. W. Palmer. The same firm also won 1st prize for the best exhibit of twelve blooms.

The most tastefully-arranged basket of Chrysanthemum blooms was shown by Mr. James Henderson, gr. to T. D. MINTO, Esq., Elmhank, Dumfries; Mr. HENDERSON being 1st and 2nd for the same in the Gardeners' class. He also won Mr. H. J. Jones' Silver Medal as the winner of most points in the Gardeners' classes for cut flowers. He was 1st all through in these classes; and was followed closely by Mr. James Duff, gr. to Colonel GORDON, Threave, Castle-Douglas.

In the plant classes the principal prize was one for a display arranged for effect in a circle 12 feet in diameter. Here last year's rivals, Messrs. JAS. SERVICE & SONS and Mr. JAS. HOUSTON, gr. to the Trustees of the Crichton Royal Institution, again met, with the

result that Messrs. SERVICE were placed 1st, though Mr. HOUSTON had greatly improved upon his group of last year. Mr. HOUSTON carried off several prizes in other plant classes; another very successful exhibitor here being Mr. JAS. HENDERSON, who received high praise from the judges for his specimen of the single Chrysanthemum Miss Rose, which was 15 feet in circumference and full of bloom. It was awarded a special Certificate of Merit.

Mr. J. Stewart, gr. to — NEILSON, Esq., Mollanee, Castle Douglas, had the best Ferns, Primula obconica, table plants, Palms, and Cyclamen; other successful competitors here being Mr. C. McIver, gr. to Mrs. YOUNG, Lincluden, Dumfries; Mr. J. HOUSTON, and Mr. J. DUFF.

Fruit was good, for this show, Mr. J. DUFF having the best Grapes, and Mr. STEWART the best Apples and Pears.

Mr. STEWART, Mr. J. DUFF, Mr. A. DUFF, Maxwelltown; and Mr. K. McKenzie, gr. to R. Y. PICKERING, Esq., Con Heath, Dumfries, were the most successful with vegetables.

ASCOT CHRYSANTHEMUM.

NOVEMBER 9, 10.—A successful autumn show was held on the above dates in the Grand Stand. The exhibits were numerous and of good quality. Cut blooms were an improvement on recent shows held here. The leading class was that for eighteen incurved and as many Japanese specimens, distinct. The main prize was a Silver Challenge Cup, and Mr. F. Ashman, gr. to C. T. D. CREWS, Esq., Billingbear Park, Wokingham, was the most successful competitor, having large, well-coloured Japanese flowers but irregular incurveds. Mr. W. Wilson, gr. to Mrs. CHRISTIE, Ribsdon, Windlesham, was 2nd.

For twenty-four Japanese flowers Mr. WILSON won 1st prize, showing quite fresh examples of medium size. He was closely followed by Mr. W. Jinks, gr. to L. J. DREW, Esq., Knowle Green House, Staines.

Mr. G. Lane, gr. to Miss RIDGE, Highfield, Englefield Green, won 1st prize for twelve Japanese blooms; Mr. W. Baines, gr. to A. F. WALTER, Esq., Bearwood, Wokingham, being 2nd.

For six flowers of any white-flowered variety Mr. G. LANE won with the variety Mrs. J. Dann. Mr. G. LANE won also for any yellow-flowered variety, showing the variety F. S. Vallis.

Incurved varieties were much better than is usually the case.

For twenty-four distinct varieties no fewer than five competed; the best—a level lot—coming from Mr. W. JINKS, followed by Mr. WILSON, with larger but less refined examples.

Single flowers were numerous and attractive, being staged loosely in vases. Mr. W. Neate, gr. to Miss THACKER, Queen's Hill, Ascot, won 1st prize for six varieties.

Of groups of Chrysanthemums and foliage plants one shown by Mr. W. Lane, gr. to Sir E. DURNING-LAWRENCE, M.P., King's Ride, Ascot, was the best; and he also had the best group of Chrysanthemums arranged by themselves.

Two exceedingly fine groups of naturally grown undisbudded plants were a distinct feature of the show, so freely were the plants flowered and so effectively were they arranged in a semi-circle. Mr. White, gr. to the Dowager Marchioness of CONYNGHAM, The Mount, Ascot, won 1st prize, and Mr. Sargent 2nd prize.

Fruit and vegetables were shown well.

KINGSTON AND SURBITON CHRYSANTHEMUM.

NOVEMBER 9, 10.—This old Society is still very much alive, and can boast of having on the above dates held its twenty-eighth successive show—a very long record. The place of the show, St. James's Hall, if much less in area than is the old gloomy cold Drill Hall, at least enables the show to be seen in great comfort, and is of ample size for an exhibition that is comparatively local. Few shows can make a prettier display, and the arrangements in every respect are excellent.

GROUPS.

Of these there were five of Chrysanthemums and five of miscellaneous plants, literally lining the Hall. In the former class a new competitor, Mr. H. Vickery, gr. to CARL VON SEIMARS, Esq., Coombe House, was a good 1st, having a fine space of fresh, well-varied, and charming flowers. Mr. W. Ambrose, gr. to C. A. MORCING, Esq., Esher, was 2nd, with a dwarf but a very bright, fresh group. Both these exhibitors had a quantity of late-struck plants in small pots for facing, and in that respect showed their fellow-competitors an example it is hoped will be followed in the future.

With miscellaneous groups, Mr. J. Rodda, gr. to E. W. ROBINSON, Esq., Esher, was a strong 1st, having one of great beauty. Calanthes, Cattleyas, and other Orchids were effective. Mr. Burchell, gr. to MALCOLM S. COOKE, Esq., Kingston Hill, was 2nd, being also

strong in Orchids; whilst Mr. J. T. Blencowe, gr. to H. COMPTON, Esq., Kingston Hill, who was 3rd, used Begonia de Lorraine, to good effect.

With winter-flowering Begonias Mr. E. Mileham, gr. to A. J. MILLER, Esq., Leatherhead, was well 1st amongst many competitors, having superbly-flowered plants. Other good ones came from Mr. Burfoot, gr. to J. B. WINDELER, Esq., Ditton Hill, and Mr. BLENCOWE, who had very dwarf densely-flowered plants of Mrs. Leopold de Rothschild.

TABLE PLANTS

were in abundance and of high quality, the best six coming from Mr. J. Lock, gr. to Mr. Justice SWINFEN-EADY, Weybridge; and Mr. BLENCOWE coming 2nd.

Mr. Fitzwater, gr. to F. BRABY, Esq., Teddington, had the best six single and six double-flowered Primulas.

CUT BLOOMS.

In the premier open class for twenty-four Japanese, Mr. G. Hunt, gr. to PANTIA RALLI, Esq., Ashted Park, was 1st with superb flowers, amongst which Duchess of Sutherland, F. S. Vallis, W. R. Church, W. A. Etherington, C. J. Salter, Mrs. Mease, Godfrey's Pride, Valerie Greenham, and others were specially good. Mr. J. LOCK ran close as a good 2nd.

The best six Japanese, one variety, came from Mr. HUNT, who had fine F. S. Vallis; Mr. MILEHAM coming 2nd with W. R. Church.

With twelve flowers set up with other foliage in one large vase, a noble class, Mr. J. LOCK was 1st with superb blooms boldly arranged, Mr. MILEHAM coming 2nd.

In the open incurved classes Mr. HUNT was 1st with twelve very fine blooms, including Duchess of Fife, Mrs. F. Judson, Countess of Warwick, Pantia Ralli, Mrs. J. Lyne, Miss E. Seward, Miss Violet Foster, and others. Mr. MILEHAM was 2nd.

Mr. HUNT had the best six of one variety in noble blooms of Duchess of Fife. The local classes were all well filled.

FRUIT

Mr. J. LOCK had the best collection of four dishes, having Alicante Grapes, Tangerine Oranges, Cox's Orange Pippin Apples, and a good Pineapple. Mr. HUNT was 2nd.

Mr. A. Sadler, gr. to Mr. J. TULK, Chertsey, had the best Grapes in fine Gros Maroc.

Mr. LOCK was 1st for four dishes of Apples, having very handsome fruits of Cox's Orange Pippin, and Cornish Aromatic, dessert, and large, handsome Peasgood's Nonesuch, and Blenheim Pippin. Mr. VICKERY was 2nd.

Mr. J. Plowman, gr. to H. LAYERS SMITH, Esq., Long Ditton, had the best Tomatos and vegetables.

MARGATE CHRYSANTHEMUM.

NOVEMBER 9, 10.—This Society held its annual show in the Hall by the Sea on the above dates, and as in previous years some very high-class fruits, vegetables, and flowers were staged. In the class for a group of miscellaneous plants, Lord DECIES, Buresford Lodge (gr., Mr. Blackwood), was awarded 1st prize for a pretty group, in which Orchids were a leading feature. 2nd, Mr. CHAPMAN, Ramsgate. For a group of Chrysanthemums, arranged with foliage plants, Mr. BLACKWOOD was 1st, and Mr. CHAPMAN 2nd. Numerous exhibits filled the various classes for other plants, all of which were of excellent merit. In many of the classes for cut flowers, Major POWELL COTTON, Birchington (gr., Mr. Cornford), won the 1st prizes, and in the Amateurs' class Mr. A. ROSS, Westgate, was most successful.

Some capital fruits were shown by Major POWELL COTTON, and J. T. FRIEND, Esq., Northdown (gr., Mr. Burgess), and these two exhibitors won most of the prizes. Grapes were not so extensively shown, but there was certainly an improvement in the size and quality of the bunches. Vegetables were a good feature, and some baskets, each containing nine distinct kinds, in really good set-up, were staged.

PUTNEY, WANDSWORTH AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 9, 10.—The Town Hall, Wandsworth, was exceedingly attractive on the above dates, owing to the twenty-seventh annual exhibition of the Putney and Wandsworth Chrysanthemum Society. For some years past this has been the most flourishing of suburban Chrysanthemum societies, and the exhibition recently held promised well for the future, for the number of exhibits was larger, and the display more extensive than on previous occasions. It is the custom for this Society to hold its exhibitions at Putney one year and at Wandsworth in the following year, but the arrangement is not altogether satisfactory, because the only hall available at Putney is much too small for the purpose. Not only were the exhibits huddled together and ineffective when staged there last year, but the space left for the movement of visitors was altogether inadequate. Consequently the exhibition under notice was much superior to that at Putney in 1903.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, contributed an extensive group of miscellaneous plants, which was much admired. In this were arranged batches of winter-flowering Begonias, Nerines, Jacobinia coccinea, Bouvardias, and Cattleyas, Cypripediums in flower, and interspersed with decorative plants of Codiaeums, Cordylines, Palms, and other fine foliage plants.

In the competitive classes, one of the best features were the groups of Chrysanthemums in pots, arranged on spaces of 40 superficial feet, and each group including not fewer than twenty varieties of Chrysanthemums. The best of these was shown by Mr. J. Prentice, gr. to J. D. CHARRINGTON, Esq., Gifford's House, Putney Heath, and was composed of excellent plants, carrying first-rate foliage and large well-developed flowers, generally one on each plant; the 2nd prize went to Mr. R. Bradford, gr. to E. H. BROWN, Esq., Highwood, Reehampton, who won 1st prize in this class last year.

Mr. J. PRENTICE also won the 1st prize for a group of miscellaneous plants arranged for effect; Mr. C. Bentley, gr. to Colonel BOSWORTH, Cedar Court, Reehampton, being 2nd.

Some very fine flowers were shown in a class for twenty-four Japanese blooms, distinct, in which Mr. J. Dark, gr. to J. HOOKER, Esq., Lomond House, Putney, won 1st prize. He had excellent flowers of the varieties F. S. Vallis, Duchess of Sutherland, Mafeking Hero, and Bessie Godfrey. 2nd, Mr. A. SMITH, Convent Gardens, Reehampton. Mr. DARK and Mr. SMITH occupied similar position in a class for eight varieties of Japanese blooms, three flowers of each, shown in vases.

The best collection of twelve Japanese blooms was shown by Mr. G. H. Street, gr. to J. A. YOUNG, Esq., Stone House, Putney; and the best collections of twelve and six Incurveds, by Mr. J. A. Fry, gr. to J. BREMNER, Esq., Holly Lodge, Putney.

A special prize offered by Mr. J. F. McLeod for an epergne of Chrysanthemums was won by Mr. J. French, gr. to Mrs. BARCLAY, Ambleside, Wimbledon Park.

There were classes for Begonias, "table" and other decorative plants, florists' arrangements, and fruits and vegetables, all of which were represented by good exhibits.

The honorary Secretary is Mr. J. F. McLeod, and the acting Secretary Mr. W. J. Reynolds, 53, Medfield Street, Reehampton.

DEVON AND EXETER HORTICULTURAL.

FRUIT AND CHRYSANTHEMUM.

EXETER, NOVEMBER 10, 11.—This was the 200th exhibition held by the Society and was the best for many years past. The entries last year numbered 376. This year they totalled 725. Fruit was of a high standard of quality, large and of splendid colour throughout. In the classes for Apples of such varieties as Cox's Orange Pippin, there were over thirty entries, while twenty entries was not at all unusual.

CHRYSANTHEMUMS IN POTS.

In a class for a collection 25 feet by 6 feet arranged in semi-circular form, Mr. W. BROCK, Exeter (gr. W. Rowland), was awarded the 1st prize, and showed a group of well-grown plants carrying large flowers. The only other competitor in this class was Mr. J. TOWNSEND (gr. H. Phillips), who was worthily awarded the 2nd prize. For an exhibit 12 feet by 6 feet in pots not exceeding 6½ in. inside measurement, Mr. C. M. COLLINGWOOD, Exeter Institution for the Blind, staged a remarkably fine collection. The flowers were large and the foliage fresh and ample. To this exhibit was awarded the National Chrysanthemum Society's Certificate and it was worthy of it. The specimens in pots and the miscellaneous plants, Poinsettias, Cyclamens, Carnations, and Gloire de Lorraine Begonias, were of considerable merit.

CUT BLOOMS

This class was, as usual, keenly contested, and instead of the blooms being put singly on stands they were shown in jars, with long stems and foliage, three blooms of each in twelve varieties. The 1st prize was won by Sir DUDLEY KING (gr. S. Baker), for a very fine lot, one of the flowers, "F. S. Vallis," being also awarded the Silver Medal for the best bloom in the show. The others in this collection were W. R. Church, Mrs. Barkley, Godfrey's King, M. Louis Remy, Madame P. Radaelli, Nellie Pockett, Miss Elsie Fulton, Sensation, Simplicity, and Miss Alice Byron. 2nd, Mr. E. H. HILL, Crediton (gr., G. Lock).

For twenty-four Japanese blooms in not fewer than eighteen distinct varieties, premier honours fell to Mr. B. H. HILL, who showed the varieties Bessie Godfrey, Duchess of Sutherland, Sensation, and George Lawrence in good form. 2nd, Sir JOHN SHELLEY.

Sir JOHN SHELLEY was 1st in a class for eighteen Japanese blooms with fine blooms of M. Ware and Godfrey's Pride. 2nd, Mr. J. R. GULSON, Teignmouth (gr., F. E. Brincombe).

In the class for twelve Japanese, Mr. C. M. COLLINGWOOD won 1st prize, showing the varieties

F. S. Vallis, Sensation, and Duke of Devonshire in fine form.

For the best six blooms of a white Japanese in vases, Mr. E. J. S. PRICE was 1st with the variety Mrs. J. Lewis; Sir JOHN SHELLEY being 2nd with the same variety.

For six yellow Japanese, Sir DUDLEY KING was 1st with very fine blooms of F. S. Vallis; Mr. J. R. GULSON was 2nd with the same variety.

The best blooms of any other colour were of the variety Madame P. Radaelli.

For twelve incurved Japanese in six varieties, Mr. J. R. GULSON won the 1st prize with good blooms of Godfrey's Pride and Madame P. Radaelli; Mr. B. H. HILL being 2nd with good blooms of Mrs. J. Cleave.

In the Amateur classes Mr. LUXMORE JONES took 1st place in that for twelve blooms. These were equal in quality to those staged in the professional classes. Among his best blooms were F. S. Vallis, Mrs. F. W. Vallis, and Miss Stopford.

FRUIT.

For three bunches of Black Alicante Grapes, Mr. J. F. G. BANNATYNE, Haldon (gr., J. Ellicott), was an easy 1st, with very fine bunches. Rev. H. CLERK was 2nd.

For three bunches of Muscat of Alexandria, Rev. F. A. H. HAMILTON GELL, Winslade (gr., G. J. Barnes), was 1st, and for three bunches of any other Grape, Mr. H. ST. MAUR, Stover Park (gr., E. Richardson), was 1st with heavy and uniform fruit of Mrs. Pince; Rev. H. CLERK being 2nd with Bowood Muscat.

For the best collection of thirty dishes of Apples, including fifteen cooking and fifteen dessert varieties, Sir JOHN SHELLEY, Shobrooke Park (gr., R. Mairs) was awarded 1st prize, having very fine fruit, notable for high colour. Sir JOHN DAVIE, Creedy Park (gr., J. Seward), was 2nd, his culinary varieties being remarkably good.

In the class for twelve dishes Mrs. F. R. HEARN, Alphington (gr., F. J. Anning), was 1st. Mr. B. H. HILL was 2nd.

In the class for six dessert varieties an old exhibitor came back again, and won handsomely, Dr. SAMWAYS, Knowle (gr., A. C. Williams), his Adam's Pearmain, Cox's Orange Pippin, Red-ribbed Greening, and Ribstons, being very fine.

The class for six dishes of culinary Apples was won by Mr. J. R. GULSON, Teignmouth. The 1st and 2nd for flavour were awarded to the variety Cox's Orange Pippin; for dessert, to King of Tompkin's County, and for culinary to Gloria Mundi. For the best single specimen, Peasgood's Nonesuch was an easy 1st.

The single dishes brought out a formidable array of fine fruit, the competition being exceptionally keen. Among the dessert varieties the Cox's Orange Pippin, shown by Lord POLTIMORE (gr., Mr. T. H. Slade), was absolutely perfect in form and colour, and his "Charles Ross" fruit was also very fine. Blenheim Orange was also good.

Pears.—For six dessert and three culinary varieties, Sir J. SHELLEY (gr. H. Mavis), was an easy 1st with Beurré Bachelier, Beurré Clairgeau, Marie Louise, Doyenné du Comice, Beurré Diel, Pitmaston Duchess, Black Pear of Worcester, Bellissime d'Hiver, and Uvedale's St. Germain.

For six dishes of dessert varieties, Mr. J. R. GULSON was 1st.

In the class for three dishes of dessert varieties, Beurré Diel, Doyenné du Comice, and Beurré Bachelier were awarded 1st prize.

The special award for flavour was awarded as usual to the variety Doyenné du Comice.

Trade exhibitors included Messrs. ROBERT VEITCH & SON, the DEVON ROSERY CO., GODFREY & SON, JARMAN & CO., G. PYNE & SON, and SAUNDERS & BISS (horticultural builders).

Honorary exhibits included the Eldorado and other new kinds of Potatoes, Apples representing two crops from the same tree this season, and other horticultural wonders. A. H.

HORTICULTURAL CLUB.

LECTURE ON GILBERT WHITE.

NOVEMBER 15.—A very pleasant evening was spent at the Horticultural Club, Hotel Windsor, on Tuesday evening last, when a good attendance of members listened to an interesting lecture by Professor G. S. Boulger on "Gilbert White and the Work of the Selborne Society." Professor Boulger has studied the character of this eighteenth-century naturalist so assiduously and sympathetically that his remarks were appreciated greatly, even by those who were familiar with the life of Gilbert White, and with his classical book *The Natural History of Selborne*. The extreme pressure upon our space this week compels us to be very brief, and we therefore cannot follow Prof. Boulger in his analysis of the mind and habits of the country clergyman, whose chief occupation was undoubtedly that of a close study of nature. His specialty was birds and insects, but he was also a close observer of plants, and of anything in nature with which he was brought into contact. Born on July 18

1720, he died on June 17, 1793, and his tomb bears the simple inscription "G. W."

Prof. Boulger stated that there had been issued a new edition of the *Natural History of Selborne* almost annually; at the very least there were eighty-five editions, and the price of them ranged from threepence up to two guineas. White, the great outdoor naturalist, taught us to use our eyes and never despise the smallest trifles. A note by Prof. Boulger on White's garden at Selborne was published, with illustrations, in the *Gardeners' Chronicle*, Dec. 26, 1903.

The Selborne Society was founded in the year 1885, and its objects among others were to preserve any species of birds, insects or plants that were in danger of becoming extinct in this country; to discourage the wearing of feathers, &c., which necessitated the destruction of rare birds; and to protect objects and sites of peculiar interest to the naturalist.

Professor Boulger, having been Editor of *Nature Notes*, the Society's publication, for the past six years, has been responsible during that time for the voicing of its policy. He related that, having issued a circular recently asking for suggestions as to what other means than education could be taken to preserve British plants in hedgerows, &c., he was surprised to find that many had quite mistaken his object, and had concluded that Professor Boulger was of the opinion that little good would result from educational efforts. Instead of this, he was of the opinion that the greatest good would follow, and he looked chiefly to the teachers in primary schools to implant in their scholars such a love and respect for everything in Nature that they will help in preserving what would otherwise become extinct. At the same time he is preparing a Bill for presentation to Parliament in order to obtain legislation on this question. Professor Boulger then gave details of species of Orchids, Ferns, and Primroses that were in danger.

Mr. C. E. Pearson, who presided, made some very scathing remarks on this subject, and was inclined to place most of the blame on the hawkers, saying, "We can excuse the botanist who takes a specimen or two, but not the hawker, who takes every specimen he can obtain." Mr. C. T. Drury, on the contrary, had something to say of "scientific vandalism"; and Mr. W. A. Bilney, whose remarks were rather more concerned with ornithology and entomology than with plants, gave instances of flagrant abuses practised by collectors. Mr. Molyneux spoke of how he had succeeded in re-establishing *Campanula rotundifolia* on Tooting Bee Common by scattering seeds over the land.

Upon the whole, it would appear that, excepting Ferns and Primroses, the greatest danger to rare plants is that of the collector, for *Orchis fusca* and similar species are not exactly the kind of flowers the hawker would desire for supplying the market. Naturalists may well say, "Save us from our friends!"

BRIEF REPORTS OF CHRYSANTHEMUM SHOWS

ITALIAN NATIONAL CHRYSANTHEMUM.—In addition to the ordinary prizes offered by the schedule for competition at the annual show of the above Society held in the Palace of the Fine Arts in Milan, on November 9 to 13, special prizes were offered as follows:—Two large Gold Medals, the gift of the King; one large Gold Medal, given by the Dowager Queen; a Silver Medal, presented by the *Asigliana Horticultural Society*; and three Silver Medals, given by the Chamber of Commerce of Milan. The high patronage bestowed upon horticulture in Italy of late must be very pleasing to those engaged in the work.

CORN EXCHANGE.—The annual Chrysanthemum Show in aid of the funds of the Corn Exchange Benevolent Society was held at the Corn Exchange Tavern, on the 9th inst. It was a neat little show, at which were exhibited some excellent blooms from various members of the Corn trade and also from amateurs not members of the trade. The leading prize-winners were Messrs. F. W. Smith, W. R. Clark, & M. Edwards, E. Mocatta, C. T. Cayley, H. J. Sequeira, and C. D. Cooper. Special exhibits were sent by Messrs. R. Longman, F. Burnes, T. Tiffin & Co., Mme. Butchart, and D. M. Grimsdale, which after the show were sold for the benefit of the funds of the Benevolent Society. There were nine classes in all, a 1st and 2nd prize being offered in each class. Two Silver Cups, of the value of £5 5s. each, were also offered for the best twelve blooms in the two divisions of members and non-members of the Corn trade.

BRADFORD CHRYSANTHEMUM EXHIBITION.—November 11.—The annual exhibition of the Bradford and District Chrysanthemum Society was opened in St. George's Hall on the above date. The collections of Chrysanthemums, taken as a whole, were exceedingly choice. In the premier class, for twenty-four of these blooms in not fewer than eighteen varieties, Mr. A. Chandler, gr. to Mr. A. James, of Rugby, was 1st. This is the third time Mr. Chandler has gained the honour, with the result that the Silver Challenge Cup, of the value of ten guineas, now becomes his own property. Mr. E. Ellis, of Heston, Cheshire, was 2nd with an excellent collection. Mr. Chandler also secured 1st prize in several other classes, and his flower of *Marquis Venosta* was adjudged the finest bloom in the exhibition. In the premier class for incurved blooms, Mr. W. Higgs, gr. to Mr. J. B. Hankey, Leatherhead, was an easy 1st. The competition for Lord Masham's

Cup was not particularly keen. Mr. J. Thornton won the trophy with a choice collection. Mr. Thornton was also successful with incurved blooms. Mr. T. Wood secured a number of 1st prizes, in one class taking 1st place against eighteen competitors. Mr. John Brooke (Heaton) and Mr. J. Midgley were other notable winners of 1st prizes. The Ryecroft Silver-gilt Medal, presented by Mr. H. J. Jones for the premier bloom in the local section, was awarded to Mr. W. Banks for an excellent flower of the variety *Elsie Fulton*. Amongst the "non-competitive" exhibits were displays of Japanese blooms by Messrs. Wells & Co., Earlswood, Surrey; table decorations by Mr. A. Edwards, Arnold, Notts; Mr. W. Colchester's (Ipswich) *Ichthemio guano*; *Chrysanthemums* by Messrs. J. Murray & Sons (Deptford); and Bruce's flower displays.

COLCHESTER CHRYSANTHEMUM.—November 10.—The autumn show held in the Corn Exchange on this date marks another notable addition to the list of successes secured by the Society. The entries constituted a record for the autumn show, numbering about 850, and in the fruit department alone—which was this year the leading line in an all-round excellent show—there were over 800 dishes. The fruit exhibited was far the best ever seen at Colchester. Vegetables also were exceptionally fine. Cut blooms and Chrysanthemums were shown well, a striking feature being the excellence of the small groups, which were exceedingly creditable to the amateur exhibitors. There was a number of non-competitive exhibits, including a grand display of Orchids by Mr. W. Parmenter, of Brightlingsea; new varieties of Potatoes from Messrs. Sutton & Sons, of Reading, and from Messrs. Dobbie & Co., of Rothsay; and Apples from Mr. W. Seabrook, of Springfield. The general result of the exhibition, which was well patronised during the afternoon and evening, cannot but be regarded as a great and deserved success for the committee.

GLOUCESTER CHRYSANTHEMUM.—The forty-first annual show in connection with the Gloucestershire Root, Fruit, and Chrysanthemum Society was held on November 9 in the Shire Hall, Gloucester, and was pronounced a record success. The entries were larger than anything the Society had had before. The Chrysanthemums formed a conspicuous feature of the exhibition, and in the opinion of the judges the display, as a whole, was the best ever seen in Gloucester. One of the most attractive classes, and one that elicited keen competition, was that for eighteen cut blooms, the 1st prize for which was awarded to Mr. James Horlick, of Cowley Manor, whose flowers included the following varieties:—F. S. Vallis, Madame Paolo Radicati, Nellie Pocket, Mafeking Hero, Elsie Fulton, Ben Wells, and Ethel Fitzroy. Sir Hubert Parry, Bart., of Highnam; Mr. W. Neath Baker, Harfield Court; and E. Pickford, Gloucester, were the principal prize-winners. The fruit exhibits were the finest ever shown in Gloucester, the chief prize-winners for collections of Apples or Pears being Messrs. Norris & Ellis, Marresmore; Col. Henry, Hatfield, Ledbury; J. R. Beckett, Chaxhill House; A. W. G. Wright; C. W. Powell, Wareham, Hereford; T. H. Phelps, Tibberton; J. Bolt, Brompton, Hereford; W. Gordon Canning, Hartpury; and E. S. Godsell, Stroud.

NORTH PECKHAM AMATEUR CHRYSANTHEMUM.—The exhibition of this Society took place recently, in the Manor Place Baths, and was a success. The prizes included valuable articles of domestic use, in addition to those that were monetary. The quality of the exhibits and the competition displayed by the exhibitors gave satisfaction to all concerned.

SHEFFIELD CHRYSANTHEMUM.—November 11, 12.—In the absence of the "Mistress" Cutler, who was to have opened the exhibition, but was prevented by illness from attending, the ceremony was performed by Councillor Kelley. The management committee were fortunate in being able to secure the permission of the Corporation to return to the fine hall at the Corn Exchange. A feature of the exhibition was the Japanese Chrysanthemums in the Lord Mayor's class, inaugurated last year by the ex-Lord Mayor (Alderman Wheatley). The winner in this class was Lieutenant-Colonel Beech, of Coventry, with excellent examples of the variety Henry Perkins. The flowers of the variety F. S. Vallis, shown by Mr. F. S. Vallis, of Bromham Fruit Farm, the 2nd prize-winner, were also excellent examples. The chief class for cut blooms of the Japanese varieties produced the keenest competition, and notable blooms of large size. The 1st prize was awarded to Mr. F. S. Vallis, the varieties including F. S. Vallis, Mrs. F. W. Vallis, W. K. Church, and Bessie Godfrey. The incurved blooms were not of super-excellence. The 1st prize was taken by Mr. J. B. Hankey, of Surrey, a champion grower in this particular class. A most interesting class was the special one for affiliated societies, who competed against one another with collections of blooms. As non-competitive exhibitors, Messrs. Artindale & Sons, of Sheffield, showed a number of artistic floral designs, and Messrs. Hiram Shaw & Sons, Sheffield, and S. W. Seagrave, Sheffield, arranged corner groups of varieties of Chrysanthemums. In the class for twenty-four incurved Chrysanthemums, not fewer than eighteen distinct varieties, the 1st prize was awarded Mr. J. B. Hankey, Feteham Park, Surrey; 2nd, Mr. G. W. Drake, Cardiff; 3rd, Mr. F. W. Jameson, Aston Hall. For twenty-four Japanese blooms, not fewer than eighteen distinct varieties, Mr. F. S. Vallis, of Bromham Fruit Farm, took 1st place, followed by Lieut.-Col. Beech, 2nd; and Mr. F. W. Jameson, 3rd. The special class for affiliated societies exhibiting twenty-four Japanese and incurved Chrysanthemums was interesting, and resulted in the Nether Hallam Society being 1st, followed by the Sun Inn Society, 2nd; 3rd, Chesterfield and District Society. Trade exhibits.—Gold Medals were awarded to Mr. S. W. Seagrave (group), and Messrs. Artindale & Sons (floral). Silver-gilt Medals to Messrs. H. Shaw & Sons (group), Clibran & Co. (floral display), J. Peed & Sons (fruit). Silver Medal to Mr. C. J. Ellis (group), and Mr. H. J. Jones (Chrysanthemums).

(For continuation of these Reports, see p. xii.)

LAW NOTE.

DUTCH BULBS.

In respect to the report of this case which appeared on p. 327, we have received the following letter:—

At the request of Van Til Hartman, Hillegom, Holland, we beg to give a more definite view as to the facts which led to the action between Van Til Hartman and K. Drost, florist, Richmond, Surrey.

In 1903, plaintiff supplied some 7,000 Tulips, such as Nelly, Cottage Maid, Duchesse de Parma, Th. Moore, and White Swan; Spanish Iris and English Iris, in sorts, for outside work.

The bulbs were supplied in excellent quality, and no complaint was made until May, 1904, when plaintiff applied for payment, defendant stating they all went rotten on account of disease not visible at the time of planting.

Defendant refused payment, and plaintiff, seeing no efforts were made for meeting one another, started an action, as hereunder stated. For the plaintiff were summoned: Plaintiff himself. As witnesses: M. J. de Graaff, firm de Graaff Bros., Leyden; and Mr. Jas. V. v. Ganten, firm, M. V. v. Ganten & Sons, Lisse. As experts: Messrs. P. Barr & Sons, seedsmen, London; Messrs. Howcroft, Watkins, seedsmen, London; Messrs. Hooper & Co., seedsmen, London; Mr. John Low, florist, Uxbridge, London. The defendant had no fewer than twelve witnesses summoned, with result as hereunder:—

VAN TIL, HARTMAN, HILLEGOM, HOLLAND v. K. DROST, RICHMOND, SURREY.

This was an action brought by the plaintiff, who resides at Hillegom, near Haarlem, in Holland, and who is a very extensive grower of Tulips and other bulbs against the defendant, who carries on business as a nurseryman at Richmond, in Surrey, to recover the sum of £28 13s. for 29,500 bulbs sold and delivered to the defendant in August, 1903. The action was originally commenced in the High Court of Justice, and was remitted for trial to the Wandsworth County Court of Surrey, and was tried there before his Honour Judge Arthur Russell on October 28.

The plaintiff and several bulb growers of repute in Holland attended the trial, which raised questions of very considerable interest to the trade. The defence set up by the defendant was that the bulbs were diseased and had therefore failed to flower and were useless, and he not only disputed his liability to pay any part of the agreed price, but he also set up a counterclaim for the sum of £15 damages alleged to have been sustained by him in respect of the carriage and cultivation of the bulbs and depreciation of his nursery ground by reason of diseased bulbs having been introduced into it.

The disease alleged to have been present in the bulbs was Tulip-rot or Tulip mould, and in support of the defendant's case Mr. William Watson, the Curator of the Royal Botanical Gardens at Kew, was called, and stated in his evidence that at the end of May this year some of the Tulip bulbs had been submitted to him, and he expressed the opinion that they were suffering from Tulip mould.

The defendant, who gave evidence in support of his case, admitted in cross-examination that he had during recent years trouble with his bulbs, and had made complaints of quality to other growers besides the plaintiff, from whom he had obtained them; and he was pressed by the plaintiff's counsel as to whether his troubles were not attributable to some defect in the soil of his nursery, or in his methods of treatment and cultivation, rather than to disease in the bulbs obtained from various different places.

This he denied, and stated that his complaints in the past in regard to bulbs had reference only to those forced, and not to any planted in the open ground, as plaintiff's were.

The plaintiff stated in his evidence that he had supplied large numbers of the same crop of bulbs from which the defendant's supply was taken to other customers, without receiving any kind of complaint in regard to them, and had also grown some himself with good results; and he added that Tulip disease was quite uncommon in Holland, and that no disease of any kind had been present in his ground.

Mr. Lauritz Torsildsen, the manager to Messrs. Howcroft & Watkins, of Covent Garden, extensive wholesale bulb importers, gave evidence, and stated that he, on behalf of his firm, purchased from the plaintiff some quantity of Tulips, and amongst these were two sorts—viz., Cottage Maid and Nelly. These two sorts had also been supplied to the defendant, and plaintiff stated that both lots were from the same stock, and were of his own growing. Witness stated that in accordance with his firm's usual custom these two sorts of Tulips were properly tested, and proved true and quite satisfactory.

He was cross-examined by the counsel for the defendant as to the disease in Tulips imported into this country, and he was of the opinion that diseased bulbs could be detected on examination.

The defendant admitted that he could see nothing the matter with the bulbs when he received them, but adhered to his opinion that the fault lay with them, and not with the soil used by him or his methods of cultivation.

It appeared that the terms of the contract set out in the plaintiff's catalogue were those used by the members of the Dutch Bulb Exporters' Association, and were that the plaintiff should supply bulbs of the best quality the year produced, and that they should be well ripened, carefully cultivated, and of sufficient age, but no warranty expressed or implied was given; and the grower, whilst guaranteeing all varieties to be true to name and description, not undertaking any responsibility for the results of planting or forcing of any bulbs supplied.

It was contended by counsel for the plaintiff that even supposing, contrary to the evidence adduced on

behalf of the plaintiff, that there was disease in the bulbs, it was not known to the plaintiff, nor discoverable by an ordinary examination; and, having regard to the terms of the contract, was not a matter for which the plaintiff was responsible, and that any risk there might be of unsuccessful flowering rested on the defendant.

The learned judge adopted this view, and gave judgment for the plaintiff for the full amount claimed with costs, and dismissed the defendant's counterclaim with costs. Signed, COLDHAM & BIRKETT, Solicitors.
3, 4, Clements Inn, Strand, London.

ANSWERS TO CORRESPONDENTS.

ALGERIAN SWEET PEAS: *L. G.* You neglected to enclose your address. These Peas were cultivated in Lady Plowden's gardens at Aston Rowant, Wallingford (gr., Mr. W. H. Clarke), but we do not think seeds can be obtained from there at present.

ASPARAGUS SPRENGERI: *D. R. D.* If the schedule called for "three Ferns, distinct varieties," it would be quite improper to exhibit *Asparagus Sprengeri*. The only excuse (not reason) for calling *Asparagus* a Fern is that sprays are used to mix with cut flowers in the same way as Ferns are employed. Ferns, as you are no doubt aware, belong to the Order Filices, and *Asparagus* to the Order Liliaceæ. No plants can be more widely different.

BOOKS: *J. M. Thompson's Gardeners' Assistant* (new edition). This was published by the Gresham Publishing Company, but a copy can be supplied you by our Publishing department, at the address of this paper.

CARNATION WITH DIVERSE-COLOURED FLOWERS: *B. R. & Co.* This is not uncommon.

CLEMATIS DISEASE: *C. A. B.* We know of no means for getting rid of this disease. You had better destroy the plants already attacked, and do not plant Clematises in the same soil again for several years to come.

CRICKET GROUND: *J. G. W.* The ground should be 40 yards in the length of the wickets, and 30 yards wide. These are minimum figures, and if a larger area is prepared so much the better.

CLIMBING PLANTS: *E. H.* Among plants to appear well in November and December you might select *Jasminum nudiflorum*, which flowers at about that period. You might plant *Cotoneaster microphylla*, and *Cratægus Pyracantha*, and even *Berberis Darwinii*, and *B. stenophylla*, which being in berry at the time you mention would have a good effect. In addition to these you might select such evergreen climbers as green, gold, and silver-leaved Ivies, which would give to the garden a furnished appearance during winter, and they would succeed on the walls facing east and north. Of flowering climbers that will bloom in spring and summer, there are among others *Wistaria chinensis*, which requires considerable space for its branches to ramble; *Tecoma radicans*, *Rosa moschata*, *R. multiflora*, and many other varieties of *Roses*, *Passiflora cærulea*, Clematises (will even succeed on a north wall), *Lonicera Caprifolium*, *Aristolochia Siphon*, &c. *Polygonum Baldschuanicum* will grow very well against a wall, but like the *Berberis* and some others of the species mentioned above, is not considered to be a wall plant, having neither a climbing nor trailing habit.

EMPLOYMENT IN THE PUBLIC PARKS: *T. S.* Apply to the Superintendents, personally if possible; but if not then by letter.

FERNS FOR COLD GREENHOUSE: *H. H.* Ferns would succeed very well in the sunless position you describe, but as you have not means of heating the structure it will be necessary to select varieties that are hardy or nearly so. Such are *Adiantum affine*, *A. Capillus Veneris*, *A. pedatum*, &c., *Botrychium virginicum*, *Cyrtomium falcatum*, *Lastreas* in variety, *Osmunda japonica corymbifera*, several species of *Polystichum*, *Aspidium*, *Dicksonia antarctica*, and a very large number of others. You had better obtain a copy of *Ferns and Fern-culture*, by J. Birkenhead, obtainable from our Publishing Department, price 1s. 3d. post free. In regard to the stove, you should obtain an estimate and designs from a horticultural builder.

FORCING ROSES: *R. S.* Forced *Roses* are already upon the markets, and many market growers have now a large number of such plants in the forcing-houses. Whether this is the best time to commence will depend upon the condition of your plants, the means of forcing that you possess, and the time at which you would soonest have the flowers ready for cutting. Procure a copy of *Roses in Pots*, by William Paul. It can be had from our Publishing Department.

FRUIT FARMING FOR A DUTCHMAN: *Miss F. M.* There are doubtless many places where a young Dutchman might, by paying a premium, obtain a position in which he would be taught practical fruit-farming in England, but the amount of the premium would depend upon many circumstances. The proper course for you to adopt is to advertise for such facilities as are required.

FRUIT-TREES ON WALL FACING EAST: *J. H. P.* Your position in Pembrokeshire is so much exposed to winds, we should recommend you to plant fan-trained Cherry-trees of such varieties as Governor Wood, Black Tartarian, and Bedford Prolific; and on the wall which faces south-east Plum-trees might be tried, selecting the varieties Denniston's Superb, Jefferson's, Transparent Gage, Coe's Golden Drop, Bryanston's Gage, Reine Claude de Bavay, Kirke's Blue, &c.

GAS LIME: *W. A. Y.* You do not appear to be clear as to the reason for applying this. If the lime is fresh from the gasworks it would doubtless kill the weeds, but it would also kill the grass and be injurious to the cattle. If you merely want to supply lime to the land, then it can be done better in the form of slaked lime.

GRUBS IN POTATOS: *J. Milson.* The grubs you send are the larvæ of the Heart-and-dart Moth, *Agrotis exclamationis*. These larvæ often do a great deal of harm to crops of various kinds, especially Mangolds, Turnips, and Potatoes; and they will also attack Onions, Celery, Sea-kale, and herbaceous plants, their natural food-plants being chiefly cruciferous weeds. The grubs will pass the winter in a more or less torpid condition, and in spring become active, feed again for a short period, and finally pupate in the soil. This and three other kinds of larvæ are generally known as surface caterpillars or cutworms, all of which are difficult to destroy, owing to the nature of their habitat. Noddressings can be applied in sufficient strength to kill the grubs, but a good dressing of lime and soot has been found beneficial. Prof. Cornstock, Cornell University, Ithaca, has shown, after long and careful investigation, that the most successful way of dealing with surface caterpillars is to set "poison baits," by soaking Clover, Lucerne or bran in Paris-green, and putting the bait about the infected crop during the time that the larvæ are active. To prepare the Clover or Lucerne, mix 1 lb. of Paris-green to 50 gallons of water and immerse the bait in it. For bran use 1 lb. Paris-green to 25 lb. of the former and add water to the consistency of a mash. The bran-bait is the most suitable for gardens. The Clover-bait should be placed in little heaps among the infected plants; while the bran is said to be most effectual when slightly buried beneath the surface of the soil. CAUTION. The poisoned baits must on no account be used where stock or fowls can gain access to it.

NAMES OF PLANTS: See note under "Names of Fruits."—*J. B. S.* 1, *Retinospora plumosa aurea* of gardens, really a form of *Cupressus pisifera*; 2, *Juniperus sinensis*; 3, *J. communis*; 4, *J. sinensis*; 5, *Retinospora squarrosa* of gardens, a form of *Cupressus pisifera*; 6, *Cupressus Lawsoniana* var.—*A. P.* The *Retinospora*-like foliage probably belongs to *Cupressus funebris*.—*F. F.* *Strelitzia Regina*.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers, still less to casual readers, to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to

give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in this issue are requested to be so good as to consult the following numbers:—*E. C.* 1, Maltster; 2, Disfigured—send earlier next season; 3, Sturmer Pippin.—*J. H. C.* 1, Holland Pippin.—*W. N.* 1, Knight's Monarch; 3, Apple Cox's Pomona; 4, Beurré Capiaumont; the other Pears had decayed.—*W. C. C.* Fearn's Pippin.—*W. R. R.* 1, Pile's Russet; 2, Hornmead's Pearmain; 3, Bergamot d'Espèren; 4, Williams' Victoria; 5, Autumn Josephine; 6, King Harry; 7, Tawny Newtown Pippin.—*A. L.* 1, White Nonpareil; 2, Round Winter Nonesuch; 3, Bramley's Seedling.—*H. Broomfield* 1, Vicar of Winkfield; 2, Madame Elise; 3, Madame Durieux; 4, Decayed; 5, Belle de Brissac.—*T. Pretty.* 1, Mère de Menage; 2, White Nonpareil; 3, Cellini Pippin; 4, Minchull Crab; 5, Fearn's Pippin; 6, Mannington's Pearmain.—*G. H. W.* 1, Dumelow's Seedling (Wellington); 2, Sturmer Pippin; 3, Wormsley Pippin; 4, Blenheim Orange; 5, Bachelors' Glory; 6, Kerry Pippin.—*Eiffel.* 1, Beurré Clairgeau; 2 and 6, Doyenné du Comice; 3 and 5, Conseiller de la Cour; 4, Baronne de Melo.—*Melville.* 1, Hollandbury; 2, Downton Pippin.—*G. Payne.* 1, Striped Beefing; 2, Small's Admirable; 3, Lord Derby; 4, Cox's Orange Pippin; 5, Waltham Pippin.—*H. H. B.* 1, Doyenné du Comice; 2, Triomphe de Joidoigne; 3, Doyenné Grise; 4, Seckle; 5, Hollandbury.—*Disa.* Pears: 1, Williams' Victoria; 2, decayed; Apples: 1, Forfar Pippin; 2, Lady Henniker; 3, Brabant Bellefleur; 4, Ashmead's Kernel Improved.—*W. D., Esher.* Harvey's Wiltshire Defiance.—*G. W. Morris.* 1, D'Arcy Spice (Baddow's Pippin); 2, Dean's Codlin; 3, Royal d'Angleterre; 4, Cox's Orange Pippin; 5, Yellow Ingestrie.—*N. M. F.* 1, New Rock Pippin; 2, Dumelow's Seedling (Wellington); 3, Minchull Crab; 4, Old English Codlin; 5, Washington; 6, Pit-maston Nonpareil (Russet-Coat Nonpareil).—*J. C. S.* All the Pears were over-ripe and some were decayed. No. 2 is Louise Bonne of Jersey and No. 4 Pituauston Duchess. Send the other two at an earlier date next season. For the names of Apples see next week's issue.—*W. G. Savage.* 1, Golden Noble; 2, Lady Henniker; 3, Hanwell Souring; 4, Claygate Pearmain; 5, British Queen.—*M. E. L.* 1, Bramley's Seedling; 2, Sturmer Pippin; 3, Belle Dubois; 4, Gooseberry Pippin; 5, French Crab; 6, Pine Golden Pippin; 7, Bishop's Thumb.—*F. C. T.* 1, Dean's Codlin; 2, Cockle's Pippin; 3, Mère de Menage; 4, Beauty of Hants; 5, Braddick's Nonpareil; 6, Afriston; 7, Summer Strawberry.

OAK-LEAVES: *A. P.* The very common "Oak-spangles"—the result of injury from an insect, *Neuroterus lenticularis*.

OAK LEAVES FOR ORCHIDS: *E. M. C., Ireland.* The leaves should not be converted into leaf-mould. In the potting of Orchids any part similar to the fine leaf-mould usually found in gardens is cast aside, and the flaky, decayed leaves only are used for mixing with peat. Some advocates for the use of leaves use only a small proportion of decayed leaves, others as much as one-third. Opinions as to its value are conflicting, although most growers who have tried it say that it gives beneficial results for a time at least.

VIOLETS: *F. H.* Your plants are attacked by the disease described on p. 328 in the issue for November 5. Read the directions then given.

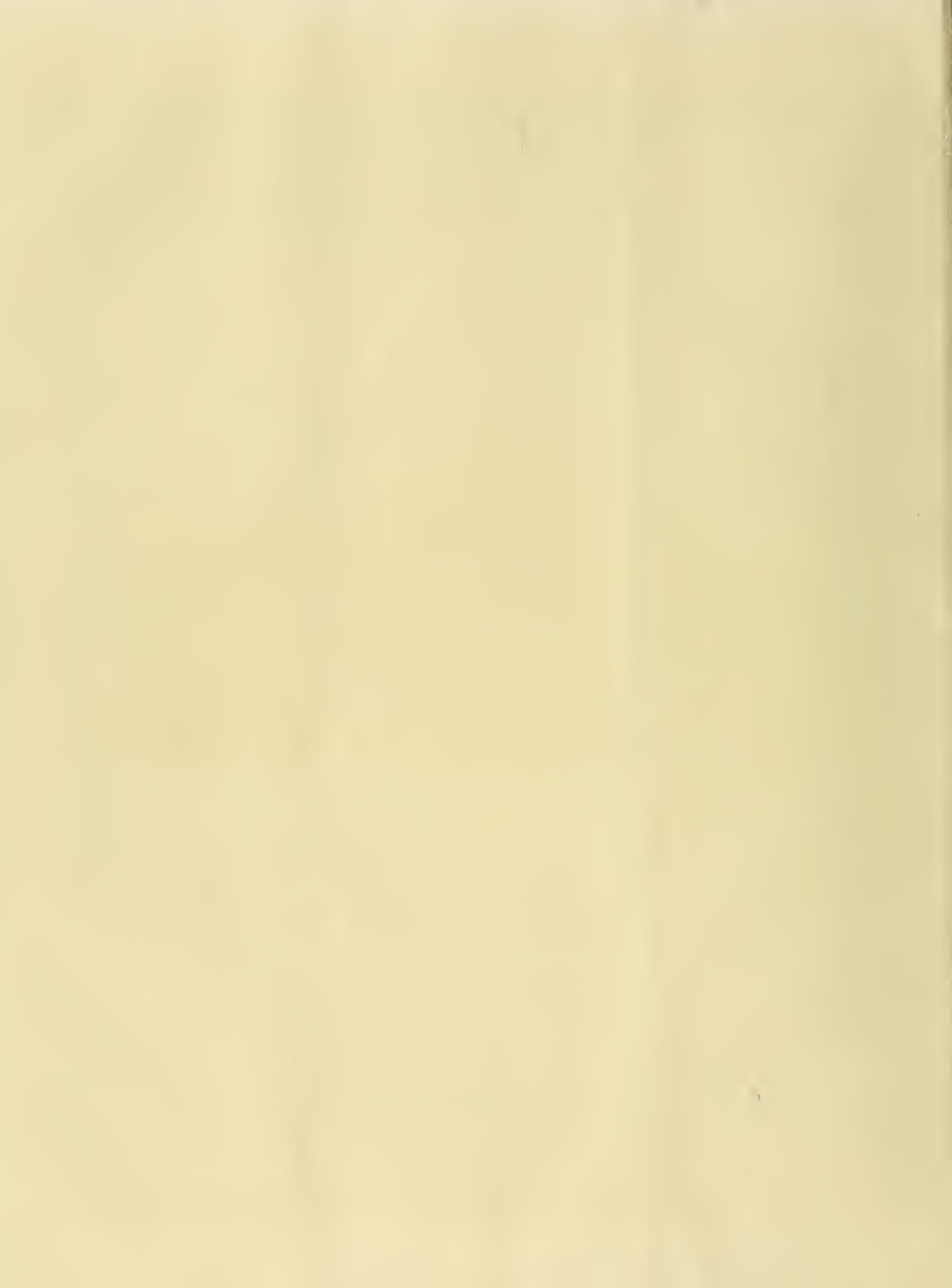
VINERY: *R. S.* The present time would be suitable for the putting in of the new front. Consult a horticultural builder. There is a good firm in your own county.

COMMUNICATIONS RECEIVED.—*W. C. & Sons.*—*H. S.*—*W. S. M.*, Bombay—*G. H.*—*E. M.*—*H. M.*—*Baubury Chrysanthemum Society.*—*W. G. S.*—*S. W. F.*—*H. J.*—*Clayton.*—*R. C.*—*E. R.*—*Field Bros.*—*G. McC.*—*A. W.*—*Weekly Subscriber.*—*A. P.*—*Co. Cork.*—*Moss Rose.*—*J. D.*—*Expert.*—*R. M.*—*Newbury.*—*J. R.*—*H. W. W.*—*A. D.*—*S. A.*—*C. H. P.*—*Lagarde & Spelman.*—*W. Hackett.*—*R. N. R. L. C.*—*Young Gardener.*—*A. B. H.*—*Aloe.*—*W. P.*—*W. B. J.*—*B. A.*—*B. C. R.*—*C. A. B.*—*H. V.*—*Canwell.*—*C. Ross.*

(For Markets and Weather, see pp. x. and xii.)



BEGONIA GLOIRE DE LORRAINE, IN THE GARDENS AT LEYSWOOD, GROOMBRIDGE, NEAR TUNBRIDGE WELLS, THE RESIDENCE OF
MRS. TEMPLE.



THE Gardeners' Chronicle

No. 935.—SATURDAY, Nov. 26, 1904.

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MR. CHAMBERLAIN'S GARDEN.

IT is well known that, notwithstanding his strenuous life as a politician, the Right Hon. Joseph Chamberlain, M.P., has devoted much time and interest to the pursuit of gardening. His interest is not of the type that leads men to take to gardening as a means of obtaining recreation at a time when they are relinquishing the work that has absorbed their energies for the best part of their life, but, on the contrary, it has been shown concurrently with his greatest political activity, and during years when Mr. Chamberlain has held offices of State such as permit of little relaxation from the calls of duty.

The predominant feature in the Highbury garden, situate in one of the suburbs of the great city of Birmingham, has been the extensive collection of choice Orchids, as may be seen by reference to the numerous descriptive notes of his collection that have appeared in these pages during the past quarter of a century. But Mr. Chamberlain's interest is not by any means confined to Orchids; and although his photograph seldom appears in the illustrated papers without showing an Orchid in his button-hole, and he wears these flowers very frequently in public, there have been developed recently at Highbury features that make the gardens of particular interest to those who admire good effects in the out-of-door grounds. This has not been done at the expense of the Orchids, which are maintained as well as or better than ever, but they constitute additional charms to

a garden possessing more than average attractions.

The Supplementary illustration to our present issue affords a view of what is known as the new rock garden, which was made about two years ago. The photograph was taken in the spring of the present year, and it will be seen that the flowers upon the Magnolia bush were just about to expand their petals. The deciduous trees had not put forth their leaves, but many of the Alpine plants were in full flower, and the surroundings having been planted with Rhododendrons and low-growing evergreen shrubs, such as *Veronica Traversii*, &c., *Choisya ternata*, *Ceanothus azureus*, and others; the rock garden at that season had a furnished appearance and plenty of foliage. In this and in other parts of the garden,

Starting from the house and proceeding to the west, a flower garden on the sloping lawn was noticed, and then a Rosary, containing beds with Box edgings, and the whole being surrounded by Yew.

There are four entrances to this garden, each one covered with an arch, and in the centre of the garden is a sundial. The effect was curious. We passed along the path and observed a pretty little dairy with thatched roof, and then appeared in view a low pool whose banks are clothed with Bamboos and Rhododendrons, the effect being very charming.

The undulating character of the grounds is exceedingly pleasant, and has rendered the work of the landscape gardener more effective than it could otherwise have been. The additions that have been recently



FIG. 162.—THE DUTCH GARDEN AT HIGHBURY.

Highbury possesses a very good collection of herbaceous and alpine species of flowering plants, which has been increased largely during recent years.

Highbury was originally laid out by Mr. Milner, the area being something like 110 acres. His scheme was to have the dwelling-house, lawn and flower garden, together with the kitchen garden, fruit and plant houses, on the highest level, the remainder of the ground being divided between pleasure-grounds and meadows. The pleasure-grounds were made in a circle enclosing the meadows, so that in walking from the dwelling-house through these grounds one would skirt the meadows and come naturally back to the house. The well-bred cattle can therefore be seen grazing from the house windows or the terrace. This scheme had the advantage of making the most of the area, and as several portions of the pleasure-grounds, after various improvements, now possess a feature distinct from the others, the walk has been made increasingly interesting.

made of Bamboos and many of the rarer shrubs have contributed much of interest to this part of the garden as well as to the part that will be referred to presently. The winding walk next passes the lake, of which an illustration appears at fig. 163, showing how Narcissus and other bulbous plants have been naturalized in suitable positions in the grass. Near by are large beds containing massed Rhododendrons, that in their season have the effect of making this immediate portion of the grounds appear like a garden of Rhododendrons. A "Bluebell walk" affords a shady retreat, and its attractions when the borders of the path are carpeted with blue flowers can well be imagined.

The main walk continues through the garden of herbaceous perennial plants, bringing into view also eight or ten arches of Roses that constitute a feature of floral profusion early in the summer season. Then the rock garden already mentioned appears in view.

The Dutch garden, shown in fig. 162, was made two years ago, and we believe was suggested by a garden Mr. Chamberlain

admired when on the Continent. Its position in relation to that of the house can be easily seen from the illustration, where the intervening meadow and cattle are clearly shown. This bulb garden is of a kind that is very uncommon in England. Its area is small, and is divided into divisions with a sundial in the centre of one, and a position in the centre of another for adding some suitable garden ornament when it is convenient to do so. The whole is surrounded by a hedge of Holly, that will eventually screen the bulb garden from the rest of the grounds. The paths between the beds are laid with tiny red tiles, and the whole is kept as neat and scrupulously clean as a drawing-room conservatory could be maintained. How dreadful would be the effect of soil or rubbish carelessly dropped on such highly-polished, brightly coloured tiles! The planting of the little gardens this season is as follows:—In one there are choice varieties of Narcissus of many different types, a bed or border of each variety, and all being planted to flower at the same time. In another division May-flowering Tulips have been planted, including double and single-flowering varieties of the various species, a bed or border of each variety, all of which will flower at the same time. The third division is planted with select species and varieties of Iris; the English and Spanish Irises are planted in masses. As the period for planting bulbs this season has not yet passed quite from us, Mr. Chamberlain's garden as shown in the illustration may have topical as well as a general interest for our readers.

The remaining feature that may now be noticed in the grounds is certainly the most interesting of all. It consists of about 2 acres of land that were taken from the meadow two years ago, and were devoted to the purpose of displaying a very choice collection of flowering trees and shrubs, with groups of Bamboos, and sufficient evergreen trees and shrubs to afford relief to the bareness of other species in winter. The planting has been done in the most informal manner, each species being given a position either of isolation or of association with others as was best suited to its characteristics. The whole of the surface is covered with grass, which is mown with scythes occasionally; and winding grass-covered paths, kept closely mown, serve to guide one through the miscellaneous assortment of beds and isolated trees and shrubs. In some cases the beds have been raised considerably above the level of the surrounding ground, for the better display of the plants. Thus *Rhododendron* (*Azalea*) *molle* and *Lilium* are planted in a bed of this type, edged with *Hypericum*. Species and varieties of *Prunus*, *Cerasus*, *Pyrus*, &c., are occasionally planted by themselves in the grass, with a carpet of dwarf-growing, brightly-coloured foliage or flowering plants around their stems. But we must not be tempted to enumerate the species that have been planted, as they are far too numerous; though it may be remarked that, amongst others, the collection of shrubby *Spiræas* is an important feature. Owing to the courtesy of Mr. Chamberlain and his gardener, Mr. J. Deacon, we have additional photographs of this garden that we hope to publish on another occasion.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

ANTHURIUM PENDULIFOLIUM, N. E. BROWN, (n. sp.).

THIS fine and very distinct species has been in cultivation at Kew since 1866, but has never been described. It was received in that year from J. Linden, of Brussels, so is probably one of the plants introduced by his firm from Columbia. In habit it is something like *A. Veitchii*, the long, bright green leaves being pendulous from their petioles as in that species, but the venation is totally different.

Subcaulescent. Petiole of the leaf ascending, 14–20 inches long, $\frac{1}{4}$ – $\frac{1}{2}$ inch thick near the base, terete, light green; blade pendulous, $2\frac{1}{2}$ –4 feet long, $4\frac{1}{2}$ –8 inches broad, elongate oblong-lanceolate, narrowing in a slightly curved line from above the middle into a shortly acuminate point, and gradually narrowing from the middle to the rounded base, bright green, paler beneath; midrib prominent on both sides, rounded above, acute beneath, slightly paler than the rest of the leaf; primary lateral veins 15–20 on each side, strongly curved, ascending, prominent on both sides of the leaf, and pale like the midrib, very distant, those at the middle part of the leaf being $2\frac{1}{2}$ –5 inches apart, the upper 3–5 uniting and forming an intramarginal vein $2\frac{1}{2}$ –3 lines within the margin, all the rest are excurrent at the margin; secondary lateral veins not in the least prominent, those arising from the midrib almost exactly horizontally spreading, or even slightly recurved. Peduncle shorter than or equalling the petiole, erect, 9–20 inches long, 2–4 lines thick. Spathe $2\frac{1}{2}$ –10 inches long, 5–9 lines broad, linear-lanceolate or broadly linear, acuminate, more or less reflexed. Spadix stipitate; stipe $\frac{1}{2}$ –1 inch long; flowering part 4–13 inches long, 3– $4\frac{1}{2}$ lines thick at the base, tapering upwards, blackish-violet; flowers small and very numerous, —1 line in diameter; anthers whitish. The dimensions of the various parts vary with the age of the plant. *N. E. Brown.*

KEW NOTES.

APHELANDRA NITENS.—This exceedingly pretty Acanthad is well represented by several small batches of plants in the Stove and in the Begonia-house. Amongst the numerous species and varieties of this genus grown at Kew, none is more worthy of popularity than *A. nitens*, from Columbia, for it is a charming foliage and flowering plant. Those now in flower are in $4\frac{1}{2}$ -inch pots, and were raised from seeds sown in February; they are 1 foot high from the top of the pot to the apex of the flower-spike, having usually five pairs of ovate leaves, the largest of which are 6 inches long by $3\frac{1}{2}$ inches broad. The upper surface is of a very deep green, and very glossy, having quite a varnished appearance; the under surface is of a dull red colour. The four-sided, erect flower-spikes are 6 inches in length, the flowers opening in succession from the base upwards, thus prolonging the flowering period. The flowers are vermilion-scarlet, corolla-tube $1\frac{1}{2}$ inch in length, the diameter of the corolla-lobes being $1\frac{1}{4}$ inch.

It is easily propagated by cuttings, which readily make roots in bottom-heat. The best method of reproduction, however, is by means of seeds, which may be obtained by fertilising a few spikes of flowers. Sow the seeds in early spring, and when the seedlings are large enough to handle, prick them off into pans, and pot them into 3-inch pots as soon as the plants are about an inch high, finally potting into $4\frac{1}{2}$ -inch pots, in which size they will flower. They should be grown in a stove temperature, whilst dryness at the root and in the atmosphere must be avoided. *W. H.*

FORESTRY.

CONSTITUTIONAL VIGOUR IN FOREST TREES, AND ITS EFFECT ON THE FINAL CROP.

I AM not aware that this subject has ever been discussed in its relation to the production of timber crops, but constitutional vigour has long appeared to me to be a factor in the value of a crop of timber of any kind or age. My ideas on the subject were borrowed originally from my garden practice, for the difference in the vigour, size, and habit of plants, from seed under equal conditions, has long been noticed and acted upon by gardeners, who "selected" on the principle of the survival of the fittest and best long before Darwin wrote. That has not been so in the case of forestry, however, for, as far as I have observed, in selecting trees to form plantations the weaklings are usually taken with the strong and planted indiscriminately. In transplanting in nurseries, it is true, the very weakest trees are usually separated from the strongest and the two replanted in different quarters, but in executing orders weak trees are sent out also as soon as they reach a planting size. What I believe, and wish to point out here, is that an Oak or Larch-tree, for example, that comes up weakly in the seed-bed will always be comparatively weak, and produce the smallest bulk of timber in a given time. If we select all the biggest and strongest trees from a lot and plant them by themselves in a plantation, that plantation will produce much the heaviest and by far the most valuable crop of timber in a given time.

One thing which generally strikes a forester when valuing standing timber is the unequal size of the trees—all of the same age. This is particularly noticeable in Larch plantations. I was over a wood last year on the South Downs that afforded marked examples of what I refer to. The trees had originally been planted too widely apart, on the old system, and owing to frequent thinnings there did not appear to have been an overhead canopy at any time or any crowding. Yet the trees were of all sizes, and the small size of some could not be attributed to want of room. The difference in size, as regards measurable feet, was not so much in the height as in the girth, for the trees with slender trunks were nearly and often quite as tall as the thickest. They had been weak trees at the outset and had been drawn up. The owner of the wood wanted to know its value, and measurements were taken all over the wood, which showed that while some trees contained nearly 20 cubic feet of timber, others did not contain above $2\frac{1}{2}$ feet, while there were all sizes between the two. The average was consequently low, being pulled down by the small trees.

Now to what was the difference in size due if not to weak vitality? My opinion is that had all the small trees been picked out at planting time and planted by themselves, and had the same been done with the stronger ones, the trees in each wood would have been of more uniform size; but the plantation of strong trees would have produced the biggest timber and by far the most valuable crop in the same time. If I am right, it shows what a vast difference selecting the strongest trees at planting time may make to a crop of timber in time and money, for the quicker the growth the shorter the rotation period and the quicker the returns.

I could record numerous examples like the above, but here is one good one that impressed me greatly. Some time ago I was over a 240-acre wood of pure Larch, fifty years old, close to Coniston Lake in Westmoreland, and adjoining the woods that surround Brantwood, the home of the late Mr. Ruskin. This wood rises with almost inaccessible steepness from the lake shore to an

elevation of 900 feet, but the lake itself is not much above the level of the sea. The present owner told me that the wood was planted by his

them 8 feet apart, and with the small trees he formed another plantation at the same time on another part of the estate. The features of the

is a difference in the size of the trees as one ascends from the level of the lake to the top of the hill, some 800 feet higher, but at all the levels



FIG. 163.—VIEW OF A PORTION OF THE LAKE AT HIGHBURY. (SEE P. 361.)

uncle, who kept a strict account of his plantings. He raised the trees from one year's seedlings in the home nursery, and planted the whole 240 acres in one year, but for this wood he selected carefully all the biggest and best trees, and planted

Coniston Wood are the regular distribution of the trees and their even size, there being no great disparity such as in the wood I mentioned first. No thinning has been done, but a fall of good timber is being got now. Of course there

the crop is uniform. It is the finest Larch plantation of its age I ever saw, contains not much under one million cubic feet, is worth a rent of about £3 per acre for the time the trees have been growing, and for many years the wood has

been let for sheep grazing as well. The formation is a kind of whinstone, and the surface soil is thin, but the rock is rotten and crumbly over the surface, and seems to suit forest trees.

The smaller and weaker trees, from the same nursery lot, were planted at an elevation of between 300 and 400 feet, on the same soil, and are about half the size of those at Conisten at the same elevation, but run pretty uniform in size also. The owner told me that his uncle, who planted both lots, had always held, from the time the trees left the nursery, that the small trees would never overtake the strong ones, and that if he had mixed both indiscriminately he would have had an uneven wood of less value. I was very particular in my inquiries, telling the owner what I wanted the information for, and it appeared to me that my ideas had been anticipated in one case at any rate.

The difference in the vigour of trees is as well seen in the nursery as in the mature wood. I was lately in an Edinburgh nursery where transplanting was going on, and was shown three quarters of Larch from the same sowing, and so different in size and vigour were they that anyone who did not know might have taken them for trees of different ages.

I once had a very large number of one-year seedling Ash and Sycamore to deal with in which the difference in constitutional vigour was very marked. The one-year-old seedlings varied a little, but the difference was much greater in the second and third years, for whereas many trees were 6 feet high, plenty were under 18 inches. To prevent over-crowding I took out every other row, and sorted out the big and little plants; but both in the rows left and transplanted lots the difference remained about the same.

The practical question is, What ought one to do in selecting trees for planting? Well, you can generally tell approximately the age of any young forest tree by the number of joints in the stem, and my advice would be to select those trees with the longest and thickest annual joints, even if a higher price had to be paid for them, for the difference in that respect would be as nothing compared to the gain in the crop of timber. Of course in selecting trees on this principle care should be taken to see that they had been raised under equal conditions in the way of transplanting, for a recently-transplanted tree suffers a temporary check. *J. Simpson.*

ORCHID NOTES AND GLEANINGS.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES.

THE September issue of M. Cogniaux's useful work gives illustrations and notes of *Brassavola Perrini*, *Cattleya* × *St. Gilles* (*Patrecinii* × *Dowiana aurea*), *Cattleya* × *Sapho* (*Dowiana aurea* × *Loddigesii*), *Cypripedium* × *aureum* var. *Marie Closson* (*Sallieri* × *Hyeannum* × *Spicerianum*), *C.* × *Chapmani superbum* (*bellatulum* × *Curtisii*), *Lycaste cruenta*, *Laelia* × *Gratrixiae* (*Digbyana* × *cinabarina*), *Dendrobium aggregatum*, *Dendrobium fimbriatum oculatum*, *Maxillaria porphyrostele*, *Oncidium concolor*, *Phaius maculatus* and *Vanilla Humblotii*.

Most of these are well-known species and varieties. The greater part of the fine old species are figured from specimens procured from the now important collection of Baron von Furstenburg, of Hugenpoet, Mintard, Germany, who is an enthusiastic lover of rare and singular species of Orchids, as well as the showy kinds. *Vanilla Humblotii* is figured from the plant which flowered with Sir Trevor Lawrence, Bart., last summer, and which was then recorded in the *Gardeners' Chronicle*. It is a very showy species with large yellow flowers with orange and chocolate-coloured marking on the lip.

POLYSTACHYA GRANDIFLORA.

Mr. J. W. Odell, gr. to Mrs. Brightwen, The Grove, Stanmore, sends a growth and inflorescence of this remarkable and rare species, which differs widely from other members of the genus, and which has been flowering at The Grove for the past six weeks.

The pseudo-bulbs are slender, and bear one narrow, erect leaf, at the base of which the inflorescences of two or three flowers appear. They are erect, 2 inches in height, including the ovaries, and the flowers are curiously placed, with what is usually considered the basal part uppermost and the odd sepal below. The wax-like flowers are an inch and a half long, whitish-green; the broader sepals marbled with purple, the spatulate petals and labellum tipped with white, and the latter tinged with deep purple. It is a native of West Africa, and is a very striking species.

CATTLEYA LABIATA VAR. DELICATA.

No gardener or amateur who possesses a house suitable for growing stove plants, and who has sufficient knowledge to cultivate ordinary plants successfully, should have any difficulty in growing and flowering the true autumn-flowering type of *Cattleya labiata*. As an illustration of the beauty and free-flowering capabilities of this plant, I am forwarding a spike of six flowers, cut from a plant to which I have given the varietal name of *delicata*. The plant in question produced five spikes; three of the spikes developed five flowers each, one developed six, and the remaining spike four flowers.

The plant was one of a consignment of 120 imported direct from South America some three years ago. After removing the decayed and nearly all the leafless pseudo-bulbs, and cleansing the remaining leaves and growths with a suitable insecticide, the plants were potted into as small-sized pots as would accommodate the bases of the pseudo-bulbs. Some of the larger growths had evidently been taken from branches of trees, and these had grown in an almost perpendicular position. These were found difficult to get into either pots or pans, so they were grown in a specially-constructed receptacle, made to imitate as nearly as possible the conditions in which they grew in their natural habitat. Pieces of Elder wood of a length of from 16 to 20 inches were placed round the sides of an 8-inch pot which was filled with clean crocks to keep the sticks in an upright position. A layer of suitable compost was placed on the crocks, and some sphagnum-moss and peat-fibre wrapped round the upright Elder-sticks. The roots of the plants were placed in the potting medium, their upper portions being fastened to the Elder wood with thin copper wire. After being thus potted they were placed on the side stage of a plant stove kept at a night temperature of from 58° to 63° during the four darker months of the year, and from 65° to 73° during the other months. Until the roots were active little water was given the plants, although the staging and the material in which they were potted were never allowed to become dry. As growth increased more water was applied, but never to excess. Nearly every plant grew, and many developed flower-spikes. Over 500 flowers have already been cut, and there are numerous others developing. I mention these facts to encourage those persons who love choice flowers in the dull, early months of winter to try their success with flowering *Cattleya labiata autumnalis*. One interesting fact about this Orchid is that out of every hundred plants no two are exactly alike when in flower. *H. J. C., Grimston Gardens, Tadcaster.* [Our correspondent forwarded an excellent inflorescence, the individual flowers of which measured over 8 inches across, and the handsomely-coloured labellum 4 inches in length. Ed.]

NEOBENTHAMIA GRACILIS

is in bloom in the Orchid-house at Kew. It is a tall, Reed-like Orchid with grassy leaves and a tuft of white flowers speckled with red dots on the ends of the stems, as in some *Epidendrums*. The species was figured in our columns on December 17, 1898, pp. 430, 431.

CHRYSANTHEMUMS.

DECORATIVE VARIETIES.—These are becoming more frequently asked for yearly. Varieties that are free-flowering when grown in a natural bush form or bush standard, such as are seen at some of the nurseries and parks in groups, are invaluable for this purpose. Some useful kinds, as shown by plants exhibited this season, are those following:—Margot, a pretty little free-flowering Japanese flower of rosy-cream colour; Elsie, pale canary-yellow, a reflexed variety; Source d'Or, golden-bronze, a most distinct and effective variety of the Japanese type; "L'île des Plaisirs," bronze; Dr. Sharpe, purple-magenta, an old but invaluable reflexed flower; Mdle. Lacroix, a pure white flower, and its pale yellow sport, Mr. C. E. Shea; Elaine, a well-known white Japanese; Ryecroft Glory, yellow; and in addition to these there are many useful varieties of the Pompon section which can be grown freely for such a purpose as that to which I am now alluding.

Quite recently there have been several new additions to the decorative section by a continental raiser, M. Auguste Nenin, of Paris. He has this year sent out some useful Japanese varieties, free-flowering plants of good habit, that make nice little bushes, and are not, like some of the older sorts, unduly tall. Of these I should be inclined to recommend *Étoile d'Or*, a bright golden-yellow flowered Japanese with medium-sized flowers; *Primevère*, another, but with rather larger starry-shaped flowers, pure pale yellow shaded buff; *Étoile Blanche*, rather large, colour pure paper-white; *Acajou*, a pretty medium-sized flower, colour dull crimson-red, florets flat, of medium width, very free; *Innocence*, a nice little white flower of considerable decorative effect; *Jason*, lemon-yellow.

Sometimes, by way of a change, the single-flowered varieties are used in this way. *Lady-smith*, rosy-purple, is one of the prettiest. *Paris Daisy* is a little gem, white with yellow centre, a starry flower. *Helen Skinner* is quite new, large in size, florets flat, colour a fine shade of velvety purple-amaranth, centre yellow. *Miss Runci-man*, primrose-yellow; *Sunbeam*, deep golden-yellow of good size, centre yellow; *Mrs. Jewry*, red; *White Duchess*, *Progress*, *James Skinner* (new), pale pure yellow, large blooms with flat florets.

ANEMONE-FLOWERED CHRYSANTHEMUMS.

This is an old-time section that appears to have fallen upon evil days. Most of the neat, old-fashioned varieties, of which *Glück* and *Fleur de Marie* may be taken as types, have given place to larger and less interesting forms from the florists' point of view. These, like the old show incurveds, have been largely crossed with the Japanese, which seem destined to spread their influence over the whole race of *Chrysanthemums*.

Of the Japanese *Anemones* there is perhaps none finer than *Descartes*, a fine bloom of great size with an excellent disc and long guard florets, the colour is a rich vineous crimson, and the variety is largely used in all the public displays in the parks. But many of the others do not come up to this standard, and are flat, unshapely things. During the past few weeks I have seen several of the old type, which have reminded me of days long ago. *Delaware*, with white guard florets and a pale-yellow disc, is one that is worthy of inclusion in any collection where the *Anemone* section is to be represented. *Glück*, a grand

yellow self, perfect as an Anemone can be, and also its bronzy-red sport, 'Georges Sand. Junon is a self blush pink with a capital disc, having florets rather longer than those already mentioned. M. Chas. Lebocqz has excellent form, and is a self-coloured cinnamon buff; Mrs. Judge Benedict, Prince of Anemones, W. W. Aster, and Sir W. Raleigh, have also been seen this season in very good character. C. Harman Payne.

CHRYSANTHEMUMS AT KEW.

No. 4 house at Kew is, as it always is, very gay. Just now, of course, the principal display is made by the Chrysanthemums, of which there is a very even lot. Tokio, a small-sized flower, is very conspicuous for its golden-bronze colour. Mrs. G. Rogers, green in the young stage, matures into a clear sulphur-yellow. Mrs. Barkley and Vivian Morel, well-known kinds, hold their own. Viscount Cranbourne is worth a note, by reason of its ruddy bronze colour with the petals yellow on the reverse side. Miss Alice Byron is a good incurved white. Almost all the sections are represented by medium-sized, well-grown specimens, of which it is not necessary to give an enumeration. Much the most interesting of the whole to those interested in the evolution of this popular flower is a group of the wild form of *Chrysanthemum indicum* with small yellow flowers. Of course, the connoisseurs would at once recognise the interest of this exhibit, and even the British public might have their attention roused if they were made acquainted, by means of a label, with the fact that they were looking on the original, or at one of the originals, from which have been evolved the extraordinarily varied Chrysanthemums in which they take delight.

NERINE BOWDENI.

Two years ago Mrs. Cornish-Bowden, of Newton Abbot, sent to Kew flowers of a Nerine with the following particulars:—"Some years since my son Athelstan sent me some bulbs of a Nerine from Cape Colony. I have flowered them for three years, and they are very beautiful. I send herewith two flowers of it, and, if new, may I ask as a favour that it may be named after my son? Unlike the majority of Nerines it never has a dormant stage, the leaves remaining green until the flowers are well in bloom. I have one spike with twelve blooms on it." These flowers on comparison agreed with those of typical *N. lucida*, Herb., figured in the *Botanical Register*, t. 497, a native of Cape Colony, introduced into cultivation, according to Herbert, by Burchell, but not known to be in cultivation now. It is remarkable for its large flowers, twenty to forty in an umbel, on a scape 8 inches long. Mrs. Cornish-Bowden presented several bulbs of her Nerine to Kew, and I believe she distributed others. One of these reached Mr. Gumbleton, who flowered it, and sent a flower to Kew without any particulars as to its origin. Being supposed to be a garden seedling or hybrid it was at first identified as *N. excellens* major, of Moore (*Florist and Pomologist*, 1882). Mr. Gumbleton added to this name one of his own—viz., *tardiflora*, and suggested a note about it, which was published in the *Gardeners' Chronicle*, February 13, 1904, p. 105. Unfortunately bulbs and leaves of this Nerine had never been seen at the Kew Herbarium, hence the two names, both of which we now know to be "bad shots." The Kew plants, originally from Mrs. Cornish-Bowden, are now in flower (under the name *lucida*); and a short time ago Messrs. Veitch, of Exeter, showed the same species in flower at a Royal Horticultural Society's meeting under the name proposed by Mr. Gumbleton—viz., *N. excellens* major *tardiflora* (see *Gardeners' Chronicle*, October 22, 1904, p. 292), when it obtained an Award of Merit. Mr. Gumbleton brought to Kew a few days ago a fine truss from his plant of

this Nerine, and this, with the plant in flower at Kew, enabled us to see that it is a distinct species affined to *N. flexuosa*, but with much larger flowers. A figure of it will be published in the *Botanical Magazine*.

N. Bowdeni is, as Mr. Gumbleton has stated, a very ornamental plant, the scape being about 18 inches long, the umbel from six to twelve-flowered, the flowers larger than those of any species in cultivation, and coloured pale pink, with a darker line down the middle of each

NOTICES OF BOOKS.

FLORA OF HAMPSHIRE.

MR. TOWNSEND has published, through Messrs Lovell Reeve & Co., a second edition of his *Flora of Hampshire*, inclusive of the Isle of Wight. Many additions and revisions have been made in this new edition, which is of an exhaustive character. After an account of the geological features of the county, the author divides it into



FIG. 164.—NERINE BOWDENI; A NEW SPECIES FROM S. AFRICA: SEGMENTS PALE ROSE, WITH CENTRAL DARKER LINE.

(From a specimen exhibited by Messrs. R. Veitch & Son, Exeter.)

segment. Pedicels 2 inches long; segments $2\frac{1}{2}$ to 3 inches long, elegantly recurved at the apex; stamens declinate, as long as the segments. The largest leaf produced by a Kew plant is 13 inches long, half an inch wide, rather thick in texture, and glossy green. Bulbs 2 inches in diameter, narrowed to a long neck, and covered with a very pale brown skin. The Kew plants are practically leafless when in flower.

Anyone who has cultivated Nerines will know how difficult it is to name them from flowers alone. W. Watson, Kew.

GERMAN ROSE SOCIETY.—H.I.M. the Empress of Germany has become the "Protector" of the Society of German Rose lovers.

twelve botanical districts, based on the river basins, a plan more convenient than natural, so far as the distribution of the plant is concerned. Mr. Townsend has followed the custom, which has now become general, of noting the first record of the "first evidence." There may be cases when such information is desirable, but it is as certain as such things can be that both the Primrose and the Cowslip, for instance, grew wild in Hampshire before the time of Dean Garnier, although he was, it seems, the first to record them in 1839.

Pinus silvestris was undoubtedly native at one time, and seedlings come up abundantly and would develop into trees were circumstances propitious, so that we might fairly consider that

tree as indigenous. *P. Pinaster* (the *P. maritima* of Miller) has no such claims to be considered a native, though its seedlings also come up freely. The notes and tables appended are full of information and give evidence of prolonged labour, while the notes on certain species and varieties give evidence of much acute observation.

ELECTRICITY IN AGRICULTURE AND HORTICULTURE. By Prof. S. Lemstrom.

This book has been published in its English dress by the "Electrician" Printing and Publishing Company, Salisbury Court, Fleet Street. It is a translation from the Swedish, and contains the results of long study and numerous experiments which began in the polar regions and have been continued in more southern latitudes. The trials have, says the author, led not only to an increase in the crops of every kind of plant which has come under treatment, but also to a change in their chemical constituents, as for instance an increase in the digestible nitrogenous matter in seeds, of the sugar in sugar-beets and in various fruits. The earlier ripening of some fruits is also stated to have been induced by the action of the electric current.

The book before us contains the detailed records from which these conclusions have been drawn. The apparatus employed and the method of using it are also explained. The experiments were made at Helsingfors and have been repeated at the College of Science at Durham, in Germany and in Sweden. The matter is one of great scientific interest and of marked practical importance, so that we hope that at some of our newly established colleges and stations further experiments may be carried out to prove the practical value of this method of applying an electric current to the growth of plants.

ILLUSTRIRTES HANDBUCH DES LAUBHOLZKUNDE, ETC. Von Camillo Karl Schneider. Zweite Lieferung. Gustav Fischer in Jena. (Williams & Norgate.)

A second instalment of a "handbook" of deciduous trees and shrubs hardy in Central Europe. It consists of elaborate descriptions in German of the several trees, with abundant contractions, which render it rather troublesome to read. It is, however, copiously provided with bibliographical references, and is well illustrated with numerous woodcuts, which are very helpful. As a reference book it will be so valuable as to be indispensable to the student of trees and shrubs.

BRITISH FRESH-WATER ALGÆ. By G. S. West, M.A. (C. J. Clay & Sons.)

A book on this subject was much required. Previous ones are out of date, and were not always satisfactory even at the time of publication. Great advances have been made in our knowledge of the life-history of these plants, but the information is scattered and not easily accessible. Mr. West has done good service by condensing into one volume the principal points in the morphology and phylogeny of these plants, and has arranged his materials so that they may readily be found. His descriptions are rather diffuse, as they are in most modern books, wherein a superfluity of verbs is indulged in, and comparison rendered correspondingly difficult. This is at variance with the practice of Linnaeus, De Candolle, and the great botanists of the last century. It is a pity that modern authors do not study that fascinating book of Alphonse de Candolle entitled *La Phytographie* before they begin to publish the results of their researches. The name "*Characiacæ*" given to a family consisting of one genus only, "*Characium*," is unfortunate from its near resemblance to "*Characææ*," a name of a quite distinct and much better known group. The illustrations are numerous,

and show clearly what it is desired should be illustrated. The book is well printed, and constitutes a very valuable addition to botanical literature.

"MISTRESSES AND MAIDS." By Isabel D. Morris (London: Jarrold & Sons, 10 and 11, Warwick Lane).

This "handbook of domestic peace" is a manual of the inter-dependence of mistress and maid. The final chapter is the best, as it epitomises the contents of the others; but unfortunately all the wise remarks in the world will not alter the fact that the demand for good domestic servants is far in excess of the supply.

"FLORA CAPENSIS." (Lovell Reeve & Co.)

The last-issued part (October, 1904) contains the continuation of the enumeration of the *Scrophulariaceæ*, by Mr. Hiern; the *Lentibulariaceæ*, by Dr. Stapf; the *Gesneraceæ*, by Mr. C. B. Clarke, in which the genus *Streptocarpus*, an exclusively African genus, is of special interest to horticulturists. *Tecoma Smithii* ×, figured under this name in the *Gardeners' Chronicle*, 1894, is pronounced by Mr. Sprague to be *Stenolobium alatum*. This part is supplied with an index.

GARDENING FOR THE MILLION. By Alfred Pink. (London: T. Fisher Unwin, Paternoster Square.)

The author sincerely wishes that his work may prove useful to those who supervise their own gardens, and that it may stimulate the cultivation of gardens still more beautiful than those generally to be met with. Mr. Pink has here given us notes about many plants, and arranged his subject-matter alphabetically. Brief indeed are most of his descriptions. For instance, of *Ambrosia mexicana* we are told that it is "a hardy annual of the simplest culture. Sow the seed in spring in any fine garden soil. Height 1½ ft." Not a word as to the order to which the plant belongs, the character of the foliage, or the colour of the flower. Many of the species mentioned are, indeed, too seldom grown, and more information about them might well have been given. However, old favourites are also catalogued, and as a reference-book on cultural details the volume before us should prove acceptable. The information contained in it is plainly expressed, and the printing is clear and distinct. The coloured frontispiece, representing Sweet Peas, is a modest representation of these beautiful and popular favourites.

AN INDIAN GARDEN. By Mrs. Henry Cooper Eggar. With coloured frontispiece and eighteen illustrations. (London: John Murray, Albemarle Street.)

To begin with, it shows no small stock of cheerful courage to attempt gardening in a "Plain" garden, where the wild and rampant jungle encroaches at the side and the blazing sun renders the shade of two umbrellas insufficient. The flowers that bloom in that garden are many and gorgeous. "May," says the writer, is the month of blossoming trees, of which this ancient city garden contains a goodly number. In all, flowering and otherwise and quite exclusive of shrubs, there are 102. There are nine Mangos, a few Teak, a Fig, two Bael, and five Date-Palm trees; also Jack-fruit, with dark, handsome foliage and large, yellow, gourd-like, malodorous fruit; old, old Peepul trees (*Ficus religiosa*) full of snakes and geckos; scarlets flowering Gold Mohurs (*Poinciana regia*), purple Lagerstromias, and yellow Laburnum-like Cassias . . . The Cork-trees, the *Millingtonia hortensis*, are my delight when they are in blossom. In the cold weather, from the tops of their Elm-like heads to the tips of their outermost branches, they are covered with drooping bunches of pure

white, scented Snowdrops. It is good to string your hammock under one and lie there one fine morning inhaling its sweetness."

Mrs. Eggar gives descriptions of many other of her favourite plants, and lively accounts of her difficulties with them. Her book is not so much interesting for its accounts of tropical gardening as it is for amusing records of Indian domestic life. The native servants, the dogs, the snakes, and the monkeys supply her with many anecdotes, narrated in the most lively and attractive manner, and for the sake of these her pages may be studied with great interest. It may be added that the illustrations of the "Garden" show beautiful glimpses of luxuriant vegetation and characteristic scenery. The names of plants require revision as to spelling, and for the sake of ignoramuses at home the Latin names should accompany the popular ones. What, for instance, can be the tree or plant alluded to in this sentence: "Just now all the berries are ripe on the Deodar"? The book is so attractive that once its perusal is begun the reader is not likely to put it down till it is finished.

NATURE-TEACHING. By Francis Watts, B.Sc., &c., Government Analytical and Agricultural Chemist, Leeward Islands, West Indies, and William G. Freeman, B.Sc., &c., Superintendent of the Colonial Collections, Imperial Institute, &c. (London: John Murray, Albemarle Street.)

The sub-title of this hand-book states that it is based upon the general principles of agriculture that can be taught in schools, and the preface mentions that it was originally intended for use in the West Indies in shaping the courses of study both in secondary and primary schools. The present edition has been revised to meet the requirements of British conditions. The author writes clearly of the biological formation of the seed, the root, the stem, and the leaf, proceeding to the chemistry of the soil, and plant food and manures. He then deals with flowers and fruits and weeds, with a concluding chapter on animal pests. Few illustrations are given, Mr. Watts considering it preferable that students should familiarise themselves with actual living specimens and not be tempted to neglect these by looking at diagrams already prepared for them. The suggestion throughout the entire work is that pupils should use books as supplementary to their own investigations and not merely learn the information by rote, verifying it from illustrations. The volume before us is an acceptable addition to school books of modern type whose aim is to induce students to observe for themselves, and may be recommended as admirably adapted for its purpose—saying enough and not too much, and making each step secure before another is taken.

THREE LITTLE GARDENERS. By L. Agnes Talbot. (London: S. C. Brown, Langham & Co., Ltd., 47, Great Russell Street, W.C.)

This is a pretty little book, apparently prepared for the coming gift-giving season. It describes how three young enthusiasts were entrusted with "gardens of their very own," and the failures and successes attending their work therein. Of course an old gardener is introduced that his wise sayings may enlighten readers as well as his supposed pupils. Still the book is pleasantly written and contains some useful hints for young workers. The three children learnt not merely "how pretty the ground is" when they owned a piece of it for themselves, but also, among other things, that "flowers give one twice as much pleasure when one understands them, and at least five times as much when one shares the pleasure with others." The illustrations (by Gertrude Bradley), must not be forgotten, as they are very pretty and add much to the charm of the book.

FLORISTS' FLOWERS.

SOME FINE OLD CARNATIONS.

It may be noted that the self Carnations, the yellow-ground and white-ground Fancies, and the yellow-ground Picotees, have increased by leaps and bounds, and have become very popular. The group of yellow-ground Picotees is of recent origin. The late Mr. E. S. Dodwell to the last deprecated making a section of yellow-ground Picotees, on the ground that the varieties were not numerous enough; but the necessity for doing so was recognised by the National Carnation Society, and since then many fine additions have been made to the group, especially by Mr. Martin R. Smith. There is therefore now no difficulty experienced in making up a stand of twelve very fine true yellow-ground Picotees.

The groups of white-ground bizarre and flaked Carnations and of white-ground edged Picotees have had fewer additions made to them, and it does not always follow that the new additions are improvements upon the older flowers. I have before me a coloured illustration of scarlet bizarre Emperor, which appeared in the *Florist's Guide* for 1850. It was a seedling obtained by Mr. J. L. Puxley, of Tenby, a noted raiser of Carnations in his day; and while making due allowance for the exercise of some imagination on the part of the artist, it must have been a flower of large size, of fine substance of petal, and brilliant colouring; the colours are as bright to-day as when the illustration came from the pencil of the artist. It seems difficult to imagine a more beautiful flower. It was said at the time to be a variety of good habit and free growth; but it does not appear to have become generally cultivated; probably the variety possessed some defect of constitution, or it may have shown a tendency to "run" to the self form.

Having regard to the number of named bizarre and flaked Carnations which have been in cultivation for twenty-five years, and some for a much longer period, one is disposed to ask, "Is any substantial improvement seen in the new varieties which have been put into commerce during the past twenty years?" Several of the late Mr. E. S. Dodwell's best varieties of Carnations date from 1880 to 1885. I suppose it can be said that in reference to the properties of substance, purity of ground, smoothness of petal, and brilliancy of colour, there has been an advance; yet it is interesting to note that many of the old flowers dating from some half a century, still hold their own in competitions. "Admiral Curzon," scarlet bizarre, sent out in 1845, and regarded by some cultivators as a weakly flower, is generally found at the top of its class. It is frequently selected as the premier Carnation at exhibitions of the flower, and almost invariably finds a place on a stand of twelve and twenty-four blooms. It is the oldest Carnation in cultivation. "Sarah Payne," a pink-and-purple bizarre, was sent out in 1847, and it was frequently shown in good character during the last summer. Mr. Dodwell, in his book on *The Carnation*, says of it: "For refined texture and colour it leaves nothing to be desired. Well done, and at its best it would grace the finest stand of flowers imagination could paint." Sportsman, scarlet flake, dates back to 1855; it originated as a sport from "Admiral Curzon" in the garden of the late Mr. J. S. Hedderly, Sneinton, Notts. The flower lost the rich dark colouring, and there remained the scarlet flake on a white ground. Sportsman sprang to the head of its class in 1855, and at its best remains there, and its character is permanently fixed. "J. D. Hextall," crimson bizarre, a flower which hands down to posterity the memory of a fine old Leicestershire florist, dates back to 1874, and Mr. Dodwell thought it to be one of the best six crimson bizarres. Other varieties date back to the seventies.

It has recently been publicly stated that the florist "coddles" his bizarre and flaked Carnations. I suppose the meaning sought to be conveyed is that the plants are subjected to conditions of atmosphere which produce a certain debility of constitution. If this had been stated of the winter-flowering and Malmaison types, which are so much grown under glass, there might have been an approach to correctness in the remarks. But it is not at all true of the method of culture adopted by the florist in respect of his Carnations. If he stretches an awning over his plants when in flower to protect them from sun and rain there is a free circulation of air on all sides; this is equally true if the plants are placed in a house for the same purposes, for the side-lights are all removed, and abundant ventilation flows in from all sides. As soon as they go out of bloom the plants are placed in the open, and they remain there after they are layered. When potted-off they are placed in a cold frame and kept close for a few days, and then fully exposed, except in cases of heavy rains or hard frost. During the winter there is free ventilation except during the continuance of severe frost, but artificial warmth is not employed. When potted into their blooming pots, they may occupy a cold frame for a short time, then they go into the open-air until such time as they come into bloom. The Carnation is cultivated in pots because the finest and most perfect blooms can be obtained only in that way. If a process of "coddling" had been applied to the plants, the varieties Admiral Curzon, Sarah Payne and Sportsman would not have survived to this day in healthy condition. R. D.

BULB GARDEN.

THE LILY SEASON.

In the *Gardeners' Chronicle* for September 17 last, the Rev. David R. Williamson made some interesting remarks concerning the favourable development of Lilies this season. That which appealed most strongly to myself, dwelling in the Thames Valley portion of Middlesex, which in the higher parts is less than 50 feet above sea-level, was the stress laid upon the moisture-loving characteristics of these Lilies generally. It is obvious that in North Britain the amount of moisture, with the other conditions of altitude and so forth, have suited many Lilies this year, and also in 1903. Of 1903 Mr. Williamson says: "This doubtless was largely owing to the superabundance of moisture, of which they can hardly have too much, unless, indeed, in winter," &c. Now, what impressed one so much in the comparatively sunless year of 1903 was the absence of good Lilies of the *L. auratum* and *L. speciosum* groups. Much rain, with little sun, is one of the most prolific causes of decay in buds and blossoms when these are fully exposed to external conditions. Root-moisture is admittedly a great gain, helping the development of the plant considerably, but in low-lying districts in a year such as 1903, when the flower-buds rarely become dry, it is a difficult matter to see a good flower, much less a good spike. In 1903 some large plantings of *L. s. Kraetzeri* and other *speciosum* varieties that came under my notice were quite a failure. "Spot" on the flower-buds and the foliage rendered the plants unsightly.

But it is highly probable that the moisture with little sunlight, usually attended with indifferent results in a low-lying, moisture-laden valley, such as that from which I write, may be the ideal conditions in a higher and drier district characterised by more bracing air. These differences of altitude exercise a far greater influence over plant-life in the open garden than we as cultivators are aware, bringing here success, and there failure. In one nursery garden of my acquaintance, where in 1903 a

considerable area was under water for a few days, the result was most disastrous. The Lily-quarter, while not swamped in the same way, was exceedingly wet for a long time, and this, coupled with an incessant over-head wetting, completed the destruction of what would otherwise have been a valuable lot of flowers. Meanwhile, in Wigtonshire, the same conditions seem to have exactly suited the selfsame kinds, hence I should regard locality, altitude, &c., as largely contributing to the success. *L. longiflorum* in all its forms, when grown in the open-air in beds, I have found to be a sand-lover. I do not merely cover the bulbs with a little sand, but envelope them in sand several inches deep. *L. excelsum* I have repeatedly seen this year in northern gardens in almost pure sand, and reputedly in a very hungry soil, yet in a dozen different directions the great spikes were abundant and good. Curiously, in looking through gardens, the remark was twice made that "Lilies do not do in this garden," but as *L. candidum* and the above-named were both fine, I remarked in reply, "It is obvious these are content, so my advice is grow them in greater quantities." *L. Henryi* is a grand Lily for most gardens. There is nothing of *L. speciosum* in it, either in flower, growth, bulb, or any other characteristic, but it is a noble and hardy Lily, well suited to British gardens generally.

Speaking of this beautiful species reminds me that at the Holland House Show this year, Messrs. Cutbush & Son had a spike of a yellow-coloured *L. Henryi* identical with the type in every way except in colour. It is a beautiful but, I believe, very rare plant. Of Lilies that have given great satisfaction this year in this district two are worthy of special mention, viz., *L. Browni chloraster* and *L. sulphureum*, of a stature akin to each other, and crowned with a head of four to six huge trumpet-like flowers of wax-like texture. More than 5 feet high, the buds prior to expansion are over 6 inches long, and the flowers emit a delicious fragrance of mixed spices. Better still, the plants are hardy and enduring. The first is scarce and may remain so; but the latter, with its characteristic axillary bulbils, may be readily increased. Mine are growing in a walled-in space between two greenhouses, and as companion plants—for I have long regarded the root companionship of other plants very helpful to Lilies—the Lilies have *Montbretias*, masses, 2 feet through at their very base almost, and choice *Daffodils*—*Madame de Graaff*, e.g., which reaches 2 feet in height; *Incarvilleas*, with *Anemone Robinsoniana* in front of all. The entire lot do exceedingly well; the Lilies and *Daffodils* are buried deeply, and the other things were purposely planted near. E. H. Jenkins, Hampton Hill.

FRUIT REGISTER.

PEAR, JOAN OF ARC.

A PEAR raised by M. Armand Sannier, by crossing Beurré Diel with pollen of Doyenné du Comice. The fruit is in season in December and January, and is like *Duchesse d'Angoulême*. It is juicy and melting, delicately perfumed, and recognised as "very good," or "good," by the Pomological Society of France. The tree is described as very fertile. A coloured figure is given of it in the *Revue Horticole* for November.

APPLE, ROSE HILL.

We find the above to be a very useful sort for cooking purposes, and I hear good accounts of it from other northern gardeners. It is a free-bearing variety, and comes into use from December onwards. The fruits are large in size and very firm in flesh. I weighed a fruit from a small tree planted two years ago, and it was $\frac{3}{4}$ lb.

Those readers of the *Gardeners' Chronicle* who live in the North at any rate, who are wishful to add to their collection of Apples, would not, I feel sure, regret adding "Rose Hill" to the number. I have no knowledge of its origin, as it is not described in that excellent reference-book of fruits, *Hogg's Fruit Manual*. My attention was first drawn to it in the York Nurseries, though I have no doubt it could be supplied by other firms besides Messrs. J. Backhouse & Son. Our fruits got used accidentally, but I am hoping to send you a few specimens next week. *H. J. Clayton, Grimston, Tadcaster.*

PEAR, ILLINKA.

The *Bulletin d'Arboriculture*, &c., for November has a coloured figure and description of this Pear. It is of Russian origin, of second-class quality, but ripening early, and being of handsome appearance, it is therefore highly esteemed in Russia as a market Pear.

BARBADOS BANANAS.

CONSIDERING the appreciation which the Banana continues to command by nearly all classes in this country as an edible fruit, it is not surprising that a considerable amount of attention has from time to time been given to its extended cultivation, and the best methods of packing, by the Department of Agriculture for the West Indies, of which Sir Daniel Morris is the energetic Imperial Commissioner.

For some time past the *Agricultural News*, which is one of the official publications of the Department, has had frequent references to the cultivation and shipment to this country of Bananas from Barbados, and up to the present time the trade has so far increased as to give every prospect to the establishment of a regular and successful branch of industry. An account of what has been done in this direction was recently given by Sir Daniel Morris at a conference of Banana growers held at Barbados, a summary of which we give, gathered from a full report published in the *Barbados Advocate*. Growers in the island have been shipping Bananas for something over a year, and though some of the results have been satisfactory, others have been disappointing, but considering that the quality of the fruit is the very best, and the facilities of getting them into the market very great, there is evidence of success. The necessity of high cultivation was pointed out, and it is estimated that £15 per acre clear profit could be obtained, and at the very least £10 per acre could be relied upon. In the Canary Islands many growers get from £15 to £20 per acre net profit. The same kind of Banana is grown in Barbados as in the Canary Islands, and this kind is said to be preferred by English consumers to those from Jamaica, Costa Rica, or Trinidad. The mode of packing adopted by the Barbados growers is said to be the best system possible, as it is independent of cold storage or anything else, so long as the fruit is stored where the air can pass through it. This system has stood the test of twenty-five years in the Canary Islands, and consists of wrapping the bunch in cotton-wool, then in paper, and filling up the crate with "Banana-trash," the dried leaves of the tree itself, which, though preventing the bunch shaking, gives sufficient elasticity to prevent the fruit from bruising. The object of the cotton-wool is to absorb any moisture that may escape from the fruit or stalk, and it also helps to produce an even yellow colour, which attracts buyers. Sir Daniel Morris stated that when going to the Northern Islands in February last he took a bunch of Bananas with him packed in the manner described. The crate was put in the hold of the steamer on the top of other cargo, and when the steamer reached Montserrat the crate was sent on shore and taken to the market, where it was on

show for a whole day with the fruit exposed to view on one side. From Montserrat it was taken to Antigua, where it remained several days before it was opened. When this was done at the end of twenty-three days, the fruits were found to be rapidly becoming yellow, and eventually ripened well and were of good flavour; not a single fruit was injured, although the crate had been landed twice and kept in the tropics the whole time.

With regard to the time of planting, it is strongly recommended that this should take place at such time only as would ensure the fruit's reaching the market at a time when it would command the highest price. Barbados growers were advised to get their fruit ready for market in the months of March, April, May, and June. There was a possibility of Bananas shipped in winter being chilled either before or after arrival at Plymouth. The heat in the months of August and September might sometimes be too great for Bananas to carry well. The Royal Mail Steam Packet Company has undertaken to carry fruit and give the best attention to it on the voyage at a fixed rate, but recommended that the crates should be of three uniform sizes, namely, 27 by 15 inches, 30 by 17 inches, and 34 by 17 inches. The cold storage system was not suited to fruit, for wherever it had been tried it had failed. On the other hand, fruit carried by ships with perfect ventilation kept up by means of fans always arrived in good condition.

The following are some of the strong points put forward in the *Agricultural News* of April 9 last in favour of Barbados Bananas. The kind grown is similar to that grown in the Canary Islands, and is known as the Chinese or dwarf Banana, also as Governor or Cavendish Banana. The plants are short in stature with stout stems, and are capable of withstanding fairly strong winds. They produce large bunches, with sometimes 200 or 250 "fingers" or single fruits in each bunch. The flavour is much liked in the English market, and it has been reported on by English dealers as "superior to that from the Canary Islands and Madeira." With the exception of Trinidad, Barbados is 1,000 miles nearer England than any Banana-growing country in the Western Hemisphere, and is therefore more favourably situated than other parts of the West Indies for supplying the British market; and Barbados being the last port of call for the Royal Mail steamers is another great advantage. Finally, with all these advantages [it is hoped and believed that the Banana industry of Barbados is likely to prove thoroughly remunerative. *John R. Jackson, Claremont, Lymington, Devon.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Dendrobium Phalenopsis Schroderianum.—In some collections there are plants of this beautiful species in full flower. They should therefore be arranged at the coolest end of the house, and in a somewhat drier atmosphere than is usual, but on no account should the pseudo-bulbs be allowed to shrivel much from over-flowering. The plants are easily injured through the strain of carrying a strong inflorescence too long, but are not readily restored to their former vigour. After the flower-spikes have been cut away, remove the plants to the lightest and driest part of the Cattleya-house, and during the long resting period afford them only just sufficient water to prevent loss of roots and undue shrivelling of the pseudo-bulbs.

Cattleya Bowringiana is now flowering, and its richly-coloured flowers, though small, are always appreciated. In a few weeks after flowering, quantities of new roots will be growing from the last-made pseudo-bulbs, and should any of the plants require more space or fresh compost, that will be the best time for the operation. The same cultural remarks apply to the following

plants:—*C. Bowringiana* hybrids, *C. Mantini*, *C. Mrs. J. W. Whiteley*, *C. Portia*, *C. Minerva*, *C. Brownie*, *C. Wendlandiana*, *Laelio-Cattleya*, *Tiresias*, &c., all of which are now [or were lately] in bloom. Plants of *Cattleya Gaskelliana*, although making roots, should not be disturbed by repotting at this season, as it is better to do this in the spring, when the new growths appear. *Cattleya Lawrenceana* being in full growth should be placed well up to the roof-glass, and in the warmest part of the house. Until growth is fully made up, keep the compost fairly moist. *C. Percivalliana* has completed its new pseudo-bulbs, and the plant will need but moderate supplies of water at the roots; over-dryness should be avoided, as this would probably cause either abortive flowering or deformed blooms.

Renanthera coccinea.—This is one of the finest Orchids we possess, for it provides, under proper cultural conditions, large branching panicles of reddish-scarlet flowers which, with proper care, will last in beauty for two or three months. But it is a plant that rarely flowers under ordinary Orchid-house treatment. At Burford we have a large plant which was sent from China to this country in 1816. There are about eight stems attached to a Silver Birch pole with the bark on, around which numerous thick fleshy roots cling tenaciously. During the past summer the plant has been growing in a hot, sunny position in the plant-stove, water being afforded five or six times each day. Growth has been luxuriant, some of the stems having increased by 4 feet and 5 feet in length. During the winter months this species requires a long and decided rest, and should be placed in a greenhouse, where the range of temperature is from 40° to 50°, and the atmosphere is dry. Close to the upright glass at the end of the house facing south is the best position, fixing the pole perpendicularly to the roof-rafter and to the staging below. It would be an advantage to arrange the pole so that it could be frequently turned round in order that each part of the plant may obtain an equal share of light and air. While at rest the plant should be syringed occasionally according to the weather outside, but sufficiently often to prevent loss of foliage or excessive shrivelling of the stems.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Gardenias.—Cuttings may be inserted at the present time to form plants for flowering from June onwards. Good plants can be so easily grown from cuttings that it is advisable to propagate a certain number each year or alternate year, and to discard an equal number of old plants. This tends to keep the stock clean, and in addition it will be found that the young and vigorous plants will produce finer flowers than older specimens. For making the cuttings, choose the tops of strong young shoots, and reduce these to a length of about 3 inches; insert them singly in small pots which have previously been filled with sand, peat, and loam in equal proportions. Afford the soil a good watering, and plunge the pots in the propagating-frame. When the cuttings have made roots, transfer them to 4½-inch pots, and later into other pots 6 inches in diameter. In these pots the plants may be allowed to produce their first crop of flowers. It is necessary to pinch out the points of the shoots several times while the plants are making their growth, in order to produce bushy specimens. Afford the plants a stove temperature and maintain a moist atmosphere in the structure. Three parts loam, one part peat, and one part leaf-soil, with some coarse sand, constitute a suitable compost for *Gardenias*.

Tree or winter-flowering Carnations.—Where good plants are required to flower during the late autumn and early winter months, cuttings should be inserted during this month and the next. This is especially the case with regard to those varieties which have not naturally a bushy habit, as the longer season of growth admits of the plants being given an extra stopping. If young side shoots about 3 inches in length be stripped from the plants with a "heel," they will make suitable cuttings without further prepara-

tion. If, however, the shoots be longer they should be reduced to that length, otherwise the base may be too woody. Insert the cuttings around the sides of small pots which have been previously filled with a compost consisting of three parts loam, one part cocoanut-fibre or leaf-soil, and a liberal allowance of silver-sand. The pots should then be plunged to the rims in a frame or hand-light placed on the stage of a low house, having a temperature of 60° at night. The plunging material and the soil should then be given a thorough watering, and it will seldom be necessary to afford more water until the cuttings have made roots. Under these conditions roots will be made in about three weeks, when the cuttings should gradually be afforded more air, and after a few days be removed from the frame to a shelf in the same house.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Kohl Rabi.—Plants raised from late sowings are now mature and may be taken up and stored in a shed, or be placed in a heap out-of-doors. When taking up the roots, cut off the leaves only and leave the tap root with all the fibre attached. In placing them together work some moderately dry soil among them, and when the heap has been finished, cover it with some straw or bracken. In this way the roots should keep sound and fit for table until the month of April.

Forcing Seakale.—In most districts the plants having matured their growths and lost all their foliage, leaving the crowns visible, a start may be made to force this vegetable either indoors or out-of-doors. If the work is to be carried on indoors, take up the crowns and place them rather closely together in boxes or beds, working some fine soil amongst the roots to retain the moisture required for the welfare of the plants. Cover the crowns to the depth of about 4 inches with Cocoanut fibre or sifted leaf-mould, and it will be found that this treatment will produce more palatable Seakale than when the crowns are forced and blanched in a dark place without any covering whatever. If the crowns are to be forced on the open bed, "Seakale-pots" will be required to place over the clumps of the crowns, and in this case also I prefer to cover the crowns with some light material, such as is recommended above for use indoors. This material may be put on when the pots have been put into position, and they will keep the material to the required height. When this has been done, the lids may be placed on the pots, and the whole covered with sufficient stable-mannure and leaves to raise the temperature around the plants to 55° or 60°. No more crowns should be covered up at one time than will be required to keep up the supply. In order to maintain successional supplies, it will be necessary to cover fresh crowns once a week, or oftener.

The Forcing of Rhubarb may also be done either indoors or out-of-doors. If the work is to be done indoors take up the stools carefully with a certain amount of soil attached, and place them in any convenient place where there is an atmospheric temperature of about 55°, putting some soil around the roots. Exclude light by placing a pot over the crowns; but if the forcing is done in a cellar or other place from which light can be excluded, the pots will not be required. If the forcing is to be done out-of-doors, it may be carried out in a similar manner to that which has been recommended for Seakale, except that the covering of light material over the crowns may be dispensed with.

Stachys tuberifera.—Have a quantity of these taken up and stored for kitchen use in case there should be hard frost. When storing the tubers work some moist soil amongst them in the heap in order to keep them fresh and plump. They should be kept in a cool place, as very little heat is sufficient to excite them into growth. *Stachys tuberifera* has succeeded here during the last five winters on a north-west border, but some of the tubers were very close to the surface, and owing to their tendency to start into growth with the first mild weather in spring, we have decided to make new plantings at once if the weather remains favourable. This will curtail the

work in spring, and prevent a check being caused to the tubers when they are starting into growth.

Salads.—Keep up the required supply by sowing seeds of Mustard and Cress every few days; blanch Endive, pot or box up Chicory, and put them into moderate heat in a dark place.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Roses.—These are best planted during the present month. Beds that are to be planted will have been trenched 2 feet 6 inches or 3 feet deep, and good fresh pasture-loam added. If the soil is of a light nature add cow-dung, but if it contains clay, add some scrapings from the road, or old mortar and plaster rubble and rough bones. The soil for Roses, however, should be moderately heavy. Any new beds that have a subsoil of stiff clay should be drained or they will fill up with surface water, which will be detrimental to the plants. If clinkers or other rough material have to be placed on the bottom for this purpose, the beds will need to be made 6 inches deeper, and if a 2½ or 3-inch drain-pipe be arranged to conduct the water into a main drain, the drainage will be effective. Should the roots be dry at the time of planting, immerse them in water for a few minutes. Make the soil firm under the plants so that they will not sink beyond the required depth, but the position of the graft or bud should be left below the surface of the soil. The soil of the bed should not be made more than 6 inches above the level. Any long growths may be shortened in order that they may not be blown about by the wind. The best effect is obtainable when one variety only is planted in each bed. Vigorous growers may be planted at distances of 2 feet 6 inches; but slow-growing varieties, such as Mrs. W. J. Grant and some of the Tea varieties, need only be given 12 inches to 18 inches. If the beds are of large size let a few standards or half-standards be planted in order to relieve the flat appearance of the dwarfier plants. For securing the plants against wind in exposed situations, a good wide three-pronged iron stake with a hole in the top is best. If these are used, place the stake in the hole first, and then the roots of the plant can be better placed in position, and will not be damaged afterwards, as would be the case if the stakes had to be thrust into the soil. Place some old india-rubber round the stem of the plant and keep the top of the stake below the point at which the graft was made.

Climbing Roses require more root room than bushes; 3 feet square is not too much for one plant. If they are to be planted in a dry situation against a wall, dig some rotten manure into the bottom of the hole. Secure the growths loosely to the wall until spring, but shorten any if they are long and have not matured fully. One of the quickest-growing varieties is *Rêve d'Or*. Newly planted beds and borders may be mulched when the weather becomes very cold. Cuttings may be inserted in the reserve garden, the plants so raised will be useful for filling up gaps, and they will prove what varieties succeed on their own roots. Let the cuttings be made about 6 to 9 inches long from the middle of the shoots, which wood will be better matured than that of the tips.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Early Figs in Pots.—It is important that a light position in a well-heated structure should be selected for this purpose, and if a bed of leaves has been provided as was advised for pot Vines, and the pots are placed on brick pedestals, a moist, genial atmosphere will be secured. In the early stages the trees should not be hurried by too much bottom heat; 60° will be found sufficient until the buds are swelling freely. When the bed of leaves has settled down and more leaves have been added, the heat may be allowed to become 5° higher. The temperature then by artificial means will be 55° at night, with a rise of 5° in the morning, before admitting air, and 10° more afterwards from sun-heat. Unless in bright weather, the syringe need only be used in the morning, there being fermenting materials in the house.

Figs planted in borders, for Early Forcing.—I as previously advised, the house and trees have been cleaned well, and the border has been treated liberally, as is necessary when the roots are so confined, in order to obtain ripe fruits in May, the house must now be closed, and a temperature of 50° maintained at night, with a rise of 10° or 15° during the day from sun-heat, using the syringe freely at least once a day, that every available surface may get moistened with water, which should be applied at a temperature a little above that of the atmosphere of the house. Admit air when the weather is mild, but close the house early in the afternoon of each day.

Peaches.—Where ripe fruits are needed very early in the season, houses containing such varieties as Alexander and Waterloo Peaches should be closed without delay, but do not apply fire-heat until the flower-buds commence to swell freely, nor while the temperature at night can be maintained at from 45° to 50° with a continual circulation of air passing through the house. The day temperature should not be allowed to exceed 55° or 60° unless by sun-heat, when it may be allowed to rise to 65°. These early varieties are very impatient of high temperatures in the early stages of forcing, and to attain success caution is also necessary to see that the roots of the trees are not constantly saturated with moisture. Do not syringe the trees in the afternoon at this dull season.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Bush-trained Trees.—This system of training is especially useful where there is not much room for larger trees. They should be worked on the dwarfing stocks, carefully pruned to induce the formation of fruiting-spurs, and selected with regard to those varieties that have been found to succeed best under this system of training. At Wrotham Park the orchard proper is somewhat small, so that in order to meet the demand for Apples, bush Apple-trees are largely grown. These occupy a position in the vegetable-garden by the side of the foot paths, and sufficient room is allowed between the Apple-trees and the Box-edging for the full development of the former. The bushes should be planted at a distance of 12 feet apart, which will allow of none too much room. As the trees develop they should also be allowed a space of quite 6 feet from the edge of the path. This may appear a great distance for small trees, but Currants or Gooseberries can be planted between them, and these, as the trees develop, can be removed. Fruit-trees are often planted too closely, and whether in the orchard, against walls, or in the fruit garden proper, ample space for the development of the individual trees is one of the most important items to be considered, otherwise as the trees extend in size they become crowded, which involves drastic treatment with the knife, both at the branches and at the roots, in order to keep the heads within reasonable space. Bush-trees should have a clear stem of fully 18 inches from the ground level to the lower set of branches. Some of the more productive varieties of Apples that succeed as bush trees are Cox's Orange Pippin, King of the Pippins, May Queen, Kerry Pippin, Worcester Pearmain, Lady Sudeley, Scarlet Nonpareil, Beauty of Bath, Lane's Prince Albert, Duke of Devonshire, Lord Grosvenor, Mère de Ménage, and Tom Putt. When planting young trees, I would strongly advise not planting too many of the early, soft-fruited kinds. What is required is a constant supply of both kitchen and dessert fruits, and not a glut of non-keeping varieties.

When planting fruit-trees see that each station is prepared thoroughly. The drainage should be sufficient, the soil sweet and not over rich, as this encourages coarse wood. A medium and well-decayed turfy loam with a sprinkling of bones and old mortar-rubble with a little burnt earth will suit them well. The soil should be trampled somewhat firm and then lightly forked over the space that the roots will occupy. See that all damaged ends of the roots are cleanly cut, and do not bury them too deeply. If the land is wet and stubborn, plant on mounds in preference to sinking the stems below the ground level.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE REMAINDER OF THE YEAR.

TUESDAY, Nov. 29	Royal Horticultural Society's Committees meet.
THURSDAY, DEC. 1	Linnean Society meet.
SATURDAY, DEC. 3	Société Française d'Horticulture de Londres meet. German Gardeners' Club meet.
TUESDAY, DEC. 6	Scottish Horticultural Association meet.
WEDNESDAY, DEC. 7	National Chrysanthemum Society's Exhibition at the Crystal Palace (2 days).
TUESDAY, DEC. 13	Royal Horticultural Society's Committees meet. Exhibition of Colonial-grown Fruits, and of Preserved Fruits, Jams, &c.
WEDNESDAY, DEC. 14	National Chrysanthemum Society's Exhibition of Market Chrysanthemums in the Essex Hall.
THURSDAY, DEC. 15	Linnean Society meet.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
WEDNESDAY NEXT—
Roses, Palms, Azaleas, Rhododendrons, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3 & 5.
—Great Trade Sale of 1,965 cases of Japanese Lilliums, &c., at 67 & 68, Cheapside, by Protheroe & Morris, at 1.
THURSDAY NEXT—
Absolute Clearance Sale of the whole of the growing Crops on land adjoining Sewage Disposal Works, Twickenham, by Protheroe & Morris, at 10.
FRIDAY NEXT—
Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, 12.30.
SATURDAY NEXT—
A Compact Freehold Property, Royal Nursery, Church Street, Whitstable, with Residence, Greenhouses, Outbuildings, &c., at Auction Mart, St. Margaret Street, Canterbury, by Protheroe & Morris, at 3 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —41°3'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 23 (6 P.M.): Max. 40°; Min. 20°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 24 (10 A.M.): Bar., 39°7'; Temp., 33°. Weather dull, ground slightly covered with snow.

PROVINCES.—Wednesday, Nov. 23 (6 P.M.): Max. 42°, North Coast of Ireland; Min. 31°, East Coast of England.

Light in Darkness.

THE taking of photographs in the dark is an old story told by facetious persons, and meant to be taken in a purely negative sense. There is, however, many a true word spoken in jest, and this is one of them. Most of us have heard of the Röntgen rays as a means of making what is obscure translucent, and of rendering visible what under ordinary circumstances is shrouded from our vision. Now we have to record another illustration of a similar phenomenon. We are indebted to Dr. RUSSELL, who brought the matter before a recent meeting of the Scientific Committee of the Royal Horticultural Society, for the photographs now reproduced; and in explanation of them we cannot do better than

cite Dr. RUSSELL's own account, as given in the *Philosophical Transactions of the Royal Society*, vol. 197, p. 281 (1904).

"It has been shown in former papers that if wood, even if old and dry, be placed on a photographic plate in the dark, it is able to act on it in such a way that when the plate is treated with an ordinary developing solution a clear picture of the structure of the wood is produced. Further



FIG. 165.—SECTION OF SCOTCH FIR.

experiments on this and allied subjects have been made, and interesting results obtained.

After experimenting with a large number of woods, the conclusion is that, almost without exception, they have this property of acting on a photographic plate in the dark. The amount of action exerted, however, varies very considerably with different woods, some requiring a much longer time to produce a good picture than others.



FIG. 166.—SECTION OF LARCH.

The ordinary limits of time and temperature are from half an hour to eighteen hours' exposure, and from ordinary temperature to about 55° C. The time of exposure may be extended to thirty or forty-eight hours, but a higher temperature cannot be used, since plates, as a rule, are damaged when heated above 55° C. This action occurs both when the wood is placed in contact with the plate and when it is supported above the plate.

Some of the most marked and interesting results are obtained by woods belonging to the group of Conifers. To take first the common Scotch Fir (*Pinus sylvestris*). A transverse section of a branch or stem about 3 inches in diameter is a convenient size to use, as it will stand on a quarter-size photographic plate. The specimen used should be turned quite flat on one side, and then rubbed with fine sand-paper till quite smooth. It is also necessary that the section be dry, or else, on warming, water will deposit on the photographic plate, and the picture be spoilt.

Fig. 165 shows the picture produced by Scotch Fir treated as above described. What is active in the wood is dark in the picture. The whole picture is perfectly clear and sharp, so much so that it will bear considerable enlargement. On carefully examining this picture, and comparing it with the original wood, it will be found that it is the light-coloured rings, the spring wood, which have acted on the plate, and that the dark rings, the autumn growth, are entirely without action. As previously pointed out, this picture is very sharply defined, and is quite constant; all specimens of this and allied Pines act in exactly the same way.

It has previously been shown that probably hydrogen peroxide is the active agent in producing pictures on a photographic plate in the dark, consequently it seems probable that the resin in the wood is indirectly the cause of the picture.

The action of Larch, which is also a member of the Fir tribe, is very interesting, for it is the reverse of that of the Scotch Fir, the dark rings being much more active than the spring wood. Fig. 166 is a picture of a transverse section of Larch. The white wood in the Larch is much harder than that in the Scotch Fir, and, taken as a whole, the Larch is a less active wood than the Scotch Fir. In the Cedar, which is so nearly allied to the Larch, the dark rings appear to be the most active, but are so near together in the specimens examined that it is difficult to trace exactly their action. With the Silver Firs (*Abies*), the dark rings, as in above cases, are active. The Cupressus tribe all seem to give an active wood, and one in which the dark rings exercise more action on the plate than the light wood. The Juniper gives a wood which is only very slightly active.

Passing on now to woods not belonging to the group of Conifers, the Oak is an active wood, also the Beech, the Acacia (*Robinia*), Spanish Chestnut. Sycamore is also a very active wood.

The English woods which have been examined may be roughly arranged in three groups—those which are very active, active, and slightly active.

The true bark, the outside layer of a tree, appears to be in almost all cases quite devoid of activity; but the layer within it, often of a brownish colour, is very active, even more so than any other part of the wood.

We have cited enough to show not only how interesting this discovery is, but what potentialities of practical usefulness it opens up.

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, December 1, 1904, at 8 p.m., when the following paper will be read:—"Proteid Digestion in Animals and Plants," by Prof. SIDNEY H. VINES, M.A., F.R.S.

IRIS UNGUICULARIS.—On an outside border by the side of one of the Orchid-houses at Kew this beautiful Iris (better known as *I. stylosa*) is still in bloom. Its bluish-violet flowers are so beautiful that those on the lookout for showy flower at this dull season should take note accordingly.

SWEET PEA.—In a recent number of the *American Florist* is a coloured figure of a new Sweet Pea sent out by Messrs. WATKINS & SIMPSON under the name of "Gladys Unwin." The flowers are borne three on a stalk, are large with a flat, erect, entire or undulate standard, the wings are incurved. The colour is pale rose-pink or flesh-coloured.

THE JAPANESE LARCH.—According to a statement in the *Journal of the Board of Agriculture* for November, this Larch, *Larix leptolepis*, is not immune from the attacks of Larch canker. *Pinus Cembra* it appears is also subject to the same disease.

JAPANESE HORTICULTURE.—The war with Russia apparently does not materially interfere with the pursuit of botanical science or horticulture. The periodicals reach us with their accustomed regularity, and the illustrations at least appeal to us if the text does not. In the last two numbers of the *Journal de la Société d'Horticulture du Japon*, there are articles on the plants of Manchuria.

BLASTING TREES WITH GELLIGNITE.—According to a recent number of *Nature* some interesting experiments in blasting tree butts with gellignite—a safety explosive—have recently been carried out at Lord LEIGH'S Stoneleigh Abbey estate near Kenilworth. The usual boring was made and filled with the explosive. An electric detonator was used, which enabled the operator to retire under cover at a safe distance. The butts operated upon were of various sizes and species, but in each case the method was found to give satisfactory results. It is also claimed to combine efficiency with economy.

SIR DANIEL MORRIS has returned to Barbados after his holiday, so called, in England. While there he secured the services of Mr. OLIVER, a cotton spinner conversant with the requirements of the manufacturers, and Mr. OLIVER has already explained to the planters the best methods of preparing the staple for export. There seems no good reason why West Indian Cotton should not rival the famous Sea Island Cotton of the Southern United States and that thus a lapsed industry may be revived.

CALLIPSYCHE AURANTIACA.—Amid a group of Nerines at Kew this extraordinary flower is now in bloom. The yellow flowers are borne in a spreading umbel at the top of a long flower-stalk. Each flower is nearly 2 inches long, bright yellow, and the stamens project far beyond the perianth.

SOLANUM INTEGRIFOLIUM takes a conspicuous part in the adornment of No. 4 house at Kew. As grown it is a small or medium-sized shrub, with large, nearly entire leaves, and globose sulcate fruit of the size of a small Apple and of a rich scarlet colour.

CROWN GALL ON APPLE-ROOTS.—"After the stock is budded and grafted and planted-out, usually at the point where the pin is inserted in the roots, a gall appears the first or second year after planting. From this gall fibrous roots push out, and sometimes there is a mass of small, bunched roots. This trouble occasionally appears lower down on the root away from the junction of the graft. This disease has become prevalent throughout the southern and south-western States of America, and is indeed very serious. In digging our two-year Apple-trees we are having to discard fully 50 per cent. of all that we dig on account of this trouble. We should be glad to know if you are acquainted with the trouble, and if you have any remedy to offer, &c." [The above citation has been transmitted to us by our valued colleague, M. ANDRÉ, in the hope that some of our readers may be able to

throw some light on the subject. Possibly the "gall" may be the result of insect puncture, as similar swellings occur as the result of attacks of American blight Coccus. ED.]

VARIATION IN PLANTS.—In a paper "On Erysiphe Graminis, D.C., and its adaptive Parasitism within the Genus Bromus," by E. S. TABRUM, the author shows that each species of Bromus possesses distinctive physiological (or constitutional) characters existing concomitantly with the specific morphological characters. These physiological characters are constant, and render the species susceptible or immune in a definite manner, so that the various species of Bromus, according to their specific constitution—if one may use the term—behave differently to the attacks of the "biologic form" of the fungus. The species *B. racemosus* and *B. "hordeaceus"* may be taken to illustrate this point. "These results lead us to conclude that the morphological species *B. mollis* includes two 'races' or sets of individuals possessing distinctive physiological (or constitutional) characters—that is to say, with regard to the forms of the fungus in question, an immune and a susceptible race. Such may be termed 'biologic forms' of a host-plant.* This fact becomes of importance in connection with the absorbing question of the possibility of the artificial breeding of immune races of plants, as for instance of Potatoes, Cucumbers, &c. Since we find in nature, within the range of a morphological species, the existence of races possessing different constitutional powers as regards resistance to the attacks of certain fungi, we have reason to hope that artificial selection constantly exercised might lead to the breeding of a race with a constitution conferring total immunity against the most destructive fungus parasites. It is certainly possible that in some cases the reaction of the plant to specialised forms of parasitic fungi will be found a valuable means of ascertaining its affinities."

GARDENERS' BENEVOLENT INSTITUTION.—We are glad to hear that the sixth annual concert organised by Mr. A. J. BROWN to aid this deserving charity was one of the most successful of all.

ENGLISH FLOWERS AT BOSTON, U.S.A.—A collection of fifty blooms of new seedling Chrysanthemums was exhibited by Messrs. W. WELLS & Co., Earlswood, Surrey, at the recent Boston Exhibition, U.S.A. The flowers were shipped to Boston on October 22, and when staged on November 3 were as fresh in appearance as any others in the exhibition. The Committee honoured this exhibit with a Gold Medal.

HORTICULTURAL MAYORS.—The representatives both of commercial and private gardening are not remiss in taking upon themselves municipal responsibilities. At Reading, Mr. MARTIN JOHN SUTTON, the senior partner in the well-known firm of Messrs. SUTTON & SONS, has had the compliment paid him of being selected from outside the Borough Council as mayor of the biscuit city during the present year. Warrington has re-elected its mayor in the person of Mr. Alderman WM. BOLTON, one of whose specialities is Orchids, and who is a member of the Orchid Committee of the Royal Horticultural Society. Middleton, Manchester, has done Mr. Councillor JAMES W. BENTLEY the double honour of making him mayor and alderman at the same time. Mr. BENTLEY is widely known in floricultural circles as the Hon. Secretary of the Royal National Tulip Society and a successful exhibitor of Auriculas, Polyanthus, &c. He has been remarkably successful in raising some alpine varieties of great merit. A nephew of the late

* It seems probable that "biologic forms" exist also within the host-species, *B. commutatus* (See Part II.).

Mr. SAMUEL BARLOW, he resides at Stakehill House, and maintains there all the floricultural traditions with which the place has been so long associated.

CHRYSANTHEMUMS AND CHARITY.—The needs of charity have been helped to the extent of a substantial sum by throwing open to the public inspection the collection of Chrysanthemums belonging to H. GRANT, Esq., at Sodbury House, Great Clacton, and for which a small fee was charged. The grounds, which are under the care of Mr. F. J. TOMS, gardener, have been open for a fortnight, and during this time the sum of £19 10s. has been collected and handed to the funds of the Clacton and District Cottage Hospital.

PUBLICATIONS RECEIVED.—The following books and publications have been received by us, some of which will be noticed at greater length as space permits:—*Landscape Gardening*, Notes and Suggestions on Lawns and Lawn Planting, Laying-out and Arrangement of Country Places, Large and Small Parks, Cemetery Plots and Railway-station Lawns, Deciduous and Evergreen Trees and Shrubs, the Hardy Border, Bedding Plants, Rockwork, &c. By Samuel Parsons, Jr., Superintendent of Parks, New York City. Illustrated. (G. P. Putnam's Sons, New York.—27, West Twenty-third Street; London: 24, Bedford Street, Strand, The Knickerbocker Press).—*The Culture of Fruit-trees in Pots*, by Josh Brace. (London: John Murray, Albemarle Street).—*Into the Fishermen*, and other Sketches of Country Life, by Alfred W. Rees. With illustrations. (London: John Murray, Albemarle Street).—*The Business Side of Agriculture*, by Arthur G. L. Rogers, M.A. (London: Methuen & Co., 35, Essex Street, W.C.).—*Vegetables and their Cultivation*, by T. W. Sanders, F.L.S. (London: W. H. & L. Collingridge, 118 and 119, Aldersgate Street, E.C.).—*The Cultivation and Preparation of Para Rubber*, by W. H. Johnson, F.L.S., Director of Agriculture, Gold Coast Colony, South Africa. (London: Crosby Lockwood & Son, 7, Stationers' Hall Court, Ludgate Hill).—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, October, 1903, March, 1904. Reports satisfactory progress, though the death of the secretary, Mr. Lancaster, was a great loss to the Society.—*West Indian Bulletin*, Vol. V., No. 2. Contents: West Indian Fodder Plants, and Cold Storage of Fruit, Date Palm, Sisal Hemp, and Anthracnose of Cotton.—*Bulletin of Miscellaneous Information, Trinidad*, July. Contents: Hints about Roses, Resin from *Cusia alba*, Rubber Planting, &c.—*Cotton, Honey, and Tobacco*, Central Experiment Canada Department of Agriculture, Central Experiment Farm, Report of the Horticulturist (T. W. Macoun), 1903. Apples, Peaches, and Grapes did well, the flowers of other fruits being injured by spring frosts. Experiments were made in growing vegetables in a cheese-cloth enclosure, and the produce was, on the whole, more tender in spite of a wet season. This bulletin gives useful lists of vegetables and hardy trees and shrubs likely to succeed in the Canadian climate.—*Ontario Horticultural Society: Bulb-Culture for the Amateur*, by W. T. Macoun and R. B. Whyte. Lists are given of Dutch bulbs that are hardy if slightly protected during a Canadian winter, and suitable for indoor cultivation.—*Bulletin Mensuel de la Société centrale d'Agriculture et d'Acclimatation de Nice et des Alpes-Maritimes*, July and August. Contains reports of meetings and several interesting papers.—*The Education of the Small Farmer*, by Prof. Robert Wallace. A lecture on agriculture, advocating the improvement of this occupation by (1) inducing boys to undertake farm work and subjecting them to technical instruction and skilled supervision, and (2) giving similar education upon farm-schools specially established for the purpose. The former system is the more to be recommended.—*Tenth Annual Report of the Fruit Experiment Stations of Ontario*, 1903, chronicles good work on the part of the Stations, and includes lists with excellent illustrations of the most suitable Apples, Peaches, &c., for various requirements.—*Government of Madras Revenue Department, Government Botanical Gardens and Parks, the Nilgiris*, August 1904. The season was exceptionally wet, and flowering plants in the open ground suffered proportionately. Many enquiries were received concerning fibre plants, and the fibre industry is apparently on the increase.—*The Queensland Agricultural Journal*, September. With an article and figure of the Chocho or Chocho fruit, a useful vegetable, and papers as usual on the Orchard, Dairy, and other branches of Agriculture.—*The Agricultural Gazette of New South Wales*, September. Contents: The Apple Industry in Tasmania, by W. J. Allen; St. John's Wort (*Hypericum perforatum*), by J. H. Maiden, &c.—From the Royal Botanic Gardens, Ceylon: Circulars 12, 13, and 14. *Nuwara Elyya Soils and their Treatment*, M. Kelway Bamber and W. Noek; *Fodders, Cereals, and Vegetables at Nuwara Elyya Gardens*, and *Fruit Trees, Ornamental Plants*, &c., at the above Gardens, by W. Noek; Circulars 15-19, &c., at the above Gardens, for 1904; 20 and 21. *A Report on Administration Reports for 1904*; 20 and 21. *A Report on some Ceylon Timbers and Cacao Canker*, and *Spraying in Ceylon*, by Herbert Wright.—*The Queensland*, September 10.—*Preliminary Report on the Soils and Agricultural Conditions of North Central Wisconsin*, by Samuel Weidman, Ph.D.—*Twenty-ninth Annual Report of the Board of Commissioners, Department of Parks*, Boston, for the year ending January 31, 1904.—From the U.S. Department of Agriculture: Bureau of Plant Industry, Bulletin No. 63: *Investigations of Rusts*, by Mark Alfred Carleton.—*Heredity in Bean Hybrids* (*Phaseolus vulgaris*), by Prof. R. A. Emerson (excerpt from the Report of the Agricultural Experiment Station of Nebraska).—*The Sunday Magazine*, November; *Good Words*, November. Both published by Isbister & Co., Tavistock Street, and both favourite periodicals for

home reading.—*The Agricultural Journal of the Cape of Good Hope*.—Canada Department of Agriculture, report of the Horticulturist. — Notice sur des Plantes Utiles, &c., du Congo, par E. de Wilde-
man. — *Proceedings of the Agri-Horticultural Society of Madras*, April to June, 1904, including notes by the Superintendent, Mr. Cavanagh, on the cultivation of Vanilla, Camphor, &c.—*Notes on the Commercial Timbers of New South Wales*, by J. H. Maiden, F.L.S. Second edition, illustrated.—From the Hatch Experiment Station of the Massachusetts Agricultural College, Technical Bulletin No. 2.—*The Graft Union*, by Mr. F. A. Waugh. — Smithsonian Institution: U.S. National Museum: *A Treatise on the Acarina, or Mites*, by Nathan Banks. — U.S. Department of Agriculture, Farmer's Bulletin, No. 204: *The Cultivation of Mushrooms*, by B. M. Duggar. — Bureau of Plant Industry, Bulletin No. 29: *The Effect of Black Rot on Turnips*. A series of Photomicrographs, accompanied by an explanatory text, by Erwin F. Smith. — Same Bureau, Bulletin No. 37: *Formation of the Spores in the Sporangia of Rhizopus nigricans and of Phycomyces nitens*, by Deane B. Swingle. — Same Bureau, Bulletin No. 55: *The Dry Rot of Potatoes due to Fusarium oxysporum*, by Erwin F. Smith and Deane B. Swingle, Laboratory of Plant Pathology.

PLANT PORTRAITS.

MAGNOLIA CAMPBELL. — *Flora and Sylva*, October (see *Gardeners' Chronicle*, March 14, 1903, p. 173).

CALCEOLARIA PLANTAGINEA. — *Flora and Sylva*, October.

LELIO-CATTLEYA REX. — *Flora and Sylva*, October.

REHMANNIA ANGULATA. — *Flora and Sylva*, September. See also Supplementary Illustration in *Gardeners' Chronicle* for May 9, 1903.

COCHLIOSTEMA ODORATISSIMUM. — *Wicner Illust. Garten Zeitung*, August.

HEMANTHUS KALBREYERI. — *Garten Flora*, t. 1531, October.

CALICOTHA SERRATIFOLIA. A shrub with shortly stalked, oblong, serrate leaves; flowers creamy-yellow, massed in globose heads. A greenhouse plant which thrives in the open-air on the Riviera. *Revue Horticole*, October 16.

EUCALYPTUS PUNCTATA. — *Forest Flora New South Wales*, t. 37: E. tereticornis, *id.*, t. 41.

SIDERONYLON AUSTRALE. — *Forest Flora New South Wales*, t. 42.

ANGOPHORA LANCEOLATA. — *Forest Flora New South Wales*, t. 43.

ALBIZZIA PRUNOSA. — *Forest Flora New South Wales*, t. 38.

SCOLOPIA BROWNII. — *Forest Flora New South Wales*, t. 44.

FLINDERSIA MACULOSA. — *Forest Flora New South Wales*, t. 39.

MACADAMIA TERNIFOLIA. — *Forest Flora New South Wales*, t. 40. (see also figure of fruits in *Gardeners' Chronicle*, September 3, 1870, p. 1181).

DAVIDSONIA PRURIENS. — *Revue de l'Horticulture Belge*, November (see also *Gardeners' Chronicle* for June 30, 1877, p. 819).

BULBOPHYLLUM BARBIFERUM. — *Revue de l'Horticulture Belge*, November.

IRIS HELDREICHII. — *Flora and Sylva*, November.

PYRUS NIEDZWETZKYANA. — *Flora and Sylva*, November.

ROSE MERIAME DE ROTHSCHILD. — Tea, blooms flesh-coloured. *Rosenzitung*, September.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

'NARTY POTATO DISEASE. — In the *Gardeners' Chronicle* for September 19, 1903, is a short notice on the occurrence of this disease among the Potatoes in the county of Cheshire, together with some notes of the results obtained by planting two of the diseased tubers. This year I continued the experiment by planting the four small tubers raised from the infected stock, all of which produced healthy plants; but unfortunately those from the two smallest tubers (see previous note), were inadvertently destroyed. The two remaining plants produced a total of twenty-six tubers, giving an aggregate weight of 33 oz. All the tubers of this generation were clean and healthy, and apparently free from any trace of the disease. I should add that the tubers were planted in a warm, dry, south border, heavily charged with lime, but without any farmyard or other manure; and I attribute the immunity of the Potatoes from the disease to the presence of the lime, and also in some small degree to the comparatively dry nature of the soil. Unfortunately I have not the convenience for conducting experiments with lime on a larger scale, but the results so far as they go are highly satisfactory, and I would strongly recommend those who are engaged in the cultivation of the Potato in the infected areas to give the land a good dressing of

fresh lime, and also to dust the tubers with the same at the time of planting. This year I have not so far had any reports as to the prevalence of the disease in its old habitat in Cheshire; but quite recently I have received examples of badly diseased tubers from a cottage garden within a mile of the city of Chester, where more than half the crop was said to have been destroyed. In this instance the tubers were almost covered with the warty or tumour-like growths, and numbers of them were quite rotten and pulpy. R. N. [For further particulars and illustration, see also *Gardeners' Chronicle*, March 21, 1903, p. 187, fig. 81.]

PHYLLOCACTUS ACKERMANNI. — This very old species or variety has two valuable properties which may not be generally known in these days of so many novelties in this class. I do not think there are any freer-flowering varieties amongst them. I have grown it for many years, still have it, and know that it is more worthy of cultivation than many of the newer kinds. It will flower twice in a year, if properly treated and looked to in the spring, and I have seen it beautifully in bloom in winter; when its large flowers offer a fine sight. It does well as an epiphyte. In its native habitat I believe it is generally found growing on branches of trees, as many plants in pots of soil would do better in Orchid compost or old decayed tree leaves reduced to powder. I think any of the Epiphyllum, Rhipsalis, and many Phyllocactus do better treated as epiphytes than in other ways, according to the grower's fancy. J. C.

COLOUR IN APPLES. — Like the writer of the very interesting communication ("H. H. R., Sidecup," p. 334), I consider that Gravenstein, when in condition, is the best of all Apples; but my experience of it as an orchard-tree is that it is a very shy bearer. About ten years since we planted about a dozen trees on the Crab stock, and the produce has been so small that I could not recommend it to any one as a profitable variety to plant. Other well-known varieties, such as King of the Pippins, Warner's King, Worcester Pearmain, Tower of Glamis, &c., planted at the same time on the same stock, have borne good crops. I think your correspondent overlooked a nice dish of September Beauty at the late great Fruit Show. I believe I saw a nice dish in the collection from Messrs. Peed & Sons, of Streatham. R. M., Newbury.

POTATO SIR J. LLEWELYN. — It is to be regretted that anyone writing concerning Potatoes should seek to damage the reputation of the above-named really fine distinct variety by suggesting that it was after all but the old International Kidney. Sir J. Llewelyn ripens far earlier than the old International. Its tubers are very diverse, its quality far superior, its tops quite distinct. When grown at Chiswick and presented to the Committee, both crop and cooking quality were first-rate. Why anyone should seek to depreciate the reputation of this Potato passes comprehension. The old International and the Jersey Flake, which are sold in shops in the spring by hundreds of tons are synonymous. Alex. Dean.

THE REV. A. FOSTER-MELLIAR. — May I ask you to be good enough to correct in the next issue of the *Gardeners' Chronicle* an error that occurs in your kindly notice of my father's death? He had not been at all an invalid, and was perfectly well up to the day of his illness. It was not till three days before his death that it was discovered that he had kidney disease. The mistake is likely to cause pain, as tending to denote some attempt at concealment on the part of my father or those about him, whereas the actual facts were that no one even suspected that he had any such ailment; and he was in no way an invalid. It may interest you to know that the third edition of his *Book of the Rose* had just been revised by him and sent to the publishers. R. A. Foster-Melliar.

CARNATION "GLACIER." — In regard to Mr. Fielder's remark on p. 353 of the *Gardeners' Chronicle*, that "Glacier" and "Mrs. Brooks" are identical, I may say that with me the two varieties are quite distinct, both in the foliage and flowers. J. Murray, Sopley.

MECONOPSIS INTEGRIFOLIA. — In connection with the statement in the issue of the *Gardeners' Chronicle* for October 1, page 240, stating that Meconopsis integrifolia had flowered for the first time in this country, I may state that a plant has been flowering all the summer in the rockery here. It has had nine flowers, and was in blossom when the frost came. This is probably the first time the plant has flowered in Scotland. (Sir) Archibald Buchan Hepburn, Smeaton-Hepburn, Prestonkirk, East Lothian, N.B., November 20, 1904.

THE CENSUS OF APPLES. — While admitting that a census of the whole of the United Kingdom is the correct method of obtaining opinions regarding a limited number of varieties I know that such a list as the audit gives is very fallacious when applied to a particular locality, and is no guide whatever as to the kinds advisable to plant. The reason for this is that the soil is so variable; where one variety succeeds another is an utter failure. It is only by personal observation that the right sorts can be chosen for any garden. This is one advantage of having so many varieties at command; if one sort will not succeed, another that will answer the same purpose can be had. Twenty-five years ago I planted here a considerable number of trees and varieties, and have added to them from time to time, so that 140 varieties have been tested in various ways. I have come to the conclusion that a large collection of sorts is neither necessary nor desirable, except for a hobby and for purposes of comparison. Of the six varieties of kitchen Apples that are given the place of honour by the voters, three are quite useless here. Lord Suffield does exist, and that is about all. The trees of it have been twenty-five years planted, and they are miserable examples in spite of all coaxing. Ecklinville Seedling was planted here fifteen years since, to the extent of three hundred trees, upon the recommendation of an expert; but the results have been quite a failure. When we have a crop the skin becomes spotted and the spots are more than skin deep, which renders the fruit quite unfit for home consumption or market. In our case it makes a splendid stock for regrafting other desirable kinds upon. Dumelow's Seedling was planted as a standard twenty-five years ago, yet it has never borne even a part of a finished crop; if by any chance a full crop has set, the fruits afterwards have refused to swell. With the other three sorts I agree; Lane's Prince Albert and Bramley's Seedling are the two finest kitchen Apples in existence. With the list of dessert sorts I more fully agree, if I except Irish Peach. Here it succeeds very well, but it is just a soft-flavourless mass. As a market Apple it is never in demand, in fact it is unsaleable. Its place will be taken ere long by Beauty of Bath, when this sort becomes better known. Not only is it superior in appearance, size and flavour, but it crops so much better under proper treatment. No one will say that King of the Pippins is good in flavour; its appearance and time of ripening are in its favour. If only Benoni would bear more freely we should see fewer of King of the Pippins than now. E. Molyneux, Hants. [Our correspondent lives in the "Southern Counties," and if he will refer to the column devoted to that section of the country in the table published on p. 298, he will find that Lord Suffield is not amongst the first six kitchen Apples for that district. Ed.]

DRACENA VICTORIA. — I have grown this Dracena successfully in a house containing red Dracenas and D. Lindenii, and under exactly similar treatment, the leaves have remained quite-free from the brown marks of which Mr. Knight complained on p. 305. Of old plants which have been "topped," I have never yet had one die down directly after "topping," but have always been able to get a good number of cuttings from them. I have at the present time a few young plants growing strong and vigorously, well coloured, and free from blotch. I might say that I exhibited at the York Gala this year a plant of D. Victoria, about 3 feet in height, perfectly balanced, furnished with leaves to the base of the stem, well coloured and free from blenish. E. L., Hale, near Altrincham, Cheshire.

MR. F. MOORE, who was for several years in our employ as assistant-editor, is seeking some post in which his extensive knowledge of horticulture in all its branches, and of estate management, would be available. Mr. MOORE's address is 18, Devonshire Place, Brighton.

MR. BEGG.—A well-merited compliment has been paid to this gentleman on the completion of his fiftieth year of service with Sir ROBERT JARDINE, Bart. The notice reaches us as this page is going through the press; we shall allude to it more fully in our next issue.

Obituary.

GEORGE THOMAS MILES.—It is with great regret we have to record the death of Mr. G. T. Miles, who for the past forty-seven years has been gardener to Lord Carrington and his predecessor at Wycombe Abbey, and Daw's Hill Lodge, during part of which period he has also been steward to his lordship. Mr. Miles, who would have been seventy-four years of age on January 10 next, retired to bed on Wednesday, November 16, apparently in his usual health, but died at 7 o'clock on the following morning. He was one of the most experienced and capable of gardeners, and was greatly esteemed by all who had dealings with him. More than a quarter of a century ago, Mr. Miles contributed weekly notes to this journal on Pineapple and general fruit cultivation, and upon vegetable culture. At that time he exhibited vegetables as successfully as any grower in this country. In 1875 there appeared in these pages a portrait and an account of his earlier life, contributed by Mr. Miles himself, and we cannot do better than reproduce his own words:

"At an early period in life, even in my school days, I had a strong propensity for gardening, which was made manifest by my seeking to be indulged with a small plot of ground in which to form a garden for myself; this in conjunction with a fine old Sweetwater Vine, which rambled over the exterior of my home, on a part of which I was allowed to operate, and where I first ventured at thinning out bunches of Grapes. Under these circumstances, unaided by professional advice or assistance, I commenced my horticultural career, being stimulated in it by an innate passion for flowers, which latter I frequently purchased out of small means, and the love of which continues with force unabated.

On leaving school my ambition remained fixed on gardening as an occupation; and shortly afterwards I entered the gardens of the late Honourable Henry Ashley, at Clewer, Berkshire, in which parish I was born on January 10, 1831. I remained in this situation nearly four years, under Mr. Thomas Roake as head gardener; he was somewhat celebrated among florists, and at the time in question was specially noted for Hollyhocks, hundreds of seedlings of which were raised there annually, and from among these his named varieties were selected.

I left Clewer to go as an apprentice for two years to Mr. Thomas Perkins, who was then head gardener to the late Viscount Combermere, Combermere Abbey, Cheshire. Shortly after the expiration of my term I was promoted to the position of foreman, which I held while I stayed there—another eighteen months—when I became desirous of increasing my knowledge and experience elsewhere, in which matter I was much assisted by Mr. Perkins. The gardens of Ralph Sneyd, Esq., at Keele Hall, Staffordshire, which at that time were rapidly rising into importance under the able management of their superintendent, Mr. William Hill, was fixed upon as a suitable remove; and through Mr. Perkins' kind intervention I was admitted there at once, and was placed in the outdoor department—a position which every young gardener should occupy for a season at least. I certainly made a pecuniary sacrifice by my move, but this I never regretted. The loss of a few shillings per week at such a period is worth hazarding for the sake of gaining practical lessons, and I refer to it here by way of encouragement to those whose aspirations are such as mine were at the time referred to. At Keele Hall acquired considerable practical experience in planting

and pruning hardy trees and shrubs, and transplanting large ones. Amongst the latter, Hollies form an important feature. Formerly a portion of these were subjected to knife pruning annually, and its beneficial effects are now unmistakably indicated by the magnificent pyramidal specimens which abound in the pleasure-grounds, such as I may venture to affirm will vie with any others in the kingdom. After two seasons' experience in this way I became foreman, and took charge of the plant department, which was extensive, both as regards plants and bedding subjects, many thousands of the latter being required annually. At this time Keele Hall gardens were justly celebrated for the remarkable examples of fine Grapes which Mr. Hill was in the habit of exhibiting, and which deservedly established his reputation as a Grape grower of the first order.

After staying more than three years at Keele I was sent by Mr. Hill, on Mr. Sneyd's recommendation, in February, 1858, to take the management of Wycombe Abbey Gardens. The late Lord Carrington, whose kindness I shall remember while memory lasts, required me to devote my chief attention to the production of the best kinds of fruits and vegetables, in quantity at all seasons. The condition of the gardens, and the structures and appliances at that time, were quite inadequate to meet such requirements; this was duly represented, and thereupon alterations, improvements, and additions were made by degrees. Until seven years had expired I did not exhibit, but since that time I have usually contributed either fruit or vegetables, or both, to most of the leading exhibitions.

I always had an inclination to cultivate Pineapples successfully. Here I have had an opportunity, which I have greatly enjoyed, of putting that liking into practice; and although time and means have been freely accorded to this purpose, it has not been carried out to the detriment of other subjects. In regard to fruiting the plants speedily, I have bestowed much attention and care on the subject, and in that respect have been eminently successful, as the fruits which have been cut here from plants in pots, the age of the plants varying from ten to eighteen months from the time of starting the suckers:—Smooth Cayenne, 9½ lb.; Prickly Cayenne, 8½ lb.; Enville, 11½ lb.; Black Prince, 10 lb.; Queen, 6½ lb.; Providence, 10½ lb. In recording these weights, I crave the indulgence of my readers for so fully alluding to this favourite topic, which is not done boastfully, but in order to bear witness to the fact that to cultivate these choice fruits successfully, it should be done expeditiously. I owe much to my noble employer, the present Lord Carrington, and his family for the encouragement I have always experienced, and for the kind consideration which they have shown to me during a period of seventeen years."

Since 1875, Mr. Miles has continued to serve Lord Carrington, and has not only merited but has enjoyed his lordship's confidence and friendship. He had sympathy with Lord Carrington's work in establishing small holdings and allotments, and in all respects earned the approval of his employer. Some of our readers who were present at the Annual Festival of the Royal Gardeners' Orphan Fund last year will remember in what appreciative terms his lordship then alluded to his gardener. As was recorded in our issue for May 9, 1903, Lord Carrington then said, Mr. Miles "had been intimately connected with his family for nearly fifty years. Lady Carrington, himself, and children regarded him as an old and faithful friend, whom he was pleased to see present at that table in good health."

Mr. Miles was a member of the Fruit and Vegetable Committee of the Royal Horticultural Society, and was present at the Committee's meeting in connection with the recent fruit show, when he appeared to be in first-rate health. Deceased leaves two sons and three daughters.

The attendance at the funeral, which took place on Monday, was probably the most numerous ever known at High Wycombe. There were present some hundreds of people, including the Earl and Countess Carrington, the Mayor of High Wycombe, representatives of the Horticultural Society, and many well-known members of the horticultural world, several of Earl Carrington's tenants, and a number of townsmen.

Mr. George Miles, who succeeds his father, has been acting as his assistant at High Wycombe for upwards of twenty years.

LEO GRINDON.—We regret to hear of the death of another old correspondent. Mr. Grindon was an enthusiastic botanist, and took great delight in stimulating others to like enthusiasm. His field lectures and visits to museums were specially valuable. In addition to his work as an oral teacher in the Manchester School of Medicine and elsewhere, Mr. Grindon was a prolific writer. His books on the "Scripture Botany" and the "Shakspeare Flora," which appeared originally in these columns, are well known. His work on "British and Garden Botany" cost him much labour, and is very useful to students. His Orchid catalogue, under the title of the *Fairfield Orchids*, was much superior to the ordinary commercial lists. Mr. Grindon was also the author of a work on "Manchester Banks and Bankers." He died on the 20th inst., in his eighty-seventh year.

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 15.—*Present*: Dr. M. T. Masters, in the chair; Messrs. Massee, Clittenden, Saunders, Holmes, and Sutton; Drs. M. C. Cooke and Rendle; Prof. Boulger; Revs. W. Wilks and G. Henslow (Hon. Sec.). Visitor, Mr. Webb.

Mignonette attacked by Eelworms.—Mr. SAUNDERS reported as follows upon plants sent to the last meeting from Hillington:—"The plants were badly attacked. The best thing to do is to burn all infected plants, and the soil they are growing in. Every care should be taken that none of the soil should get mixed with soil that is not infected, either on the potting-bench or elsewhere; and the pots in which the plants were growing should be baked or thoroughly boiled before being used again."

Palm-scale.—Mr. SAUNDERS reports upon Palms attacked by scale:—"The specimens sent are the scale insects, *Aspidiotus hederae*, a very common insect on various plants in stove and greenhouses. The best means of destroying them is to wash them off with a sponge and soft-soap and water or a solution of paraffin emulsion. A detailed description is given in *Newstead's Coccidi*. The eggs of these insects are laid beneath the scale of the female, and when the young are hatched they spread themselves over the plants until they find a suitable position, they then thrust their proboscis into the leaf and remain in that place for the rest of their lives."

Roots attacked by various pests.—With reference to some Daisies, Mr. SAUNDERS observed that "it is a good way to destroy various pests which are attacking the roots of a plant, when you lift it, to thoroughly drench the soil with boiling water. This destroys any of the pests which may be left in the ground. The soil from the roots of the lifted plant should be removed as far as possible before it be replanted and the roots washed." A vote of thanks was accorded to Mr. Saunders for his communications.

Puccinia gentiane (Strauss).—The three following communications were received from Dr. FLOWRIGHT: "On *Gentiana Amarella* on the Chalk Downs near Salisbury (Mr. E. J. Tatum, Sept. 19, 1904). This *Puccinia* has not, I believe, been previously recorded as the host plant in England. It grew far away from cultivation, and can hardly have been introduced as the specimens found some years ago in Kew Gardens probably were. The *Puccinia* was found in the following month (October, 1904) as the same host plant, about 17 miles distant from the first locality."

Rhizoctima violacea (Tul).—"This disease is not at all a common one in this part of East Anglia, according to my experience. This year, however, it has attacked certain crops of Carrots. The specimen sent shows how the violet mycelium has eaten into the middle of the Carrot. It has also attacked the apex

and completely arrested the development of the root. The specimen came from Terrington St. Clement, near King's Lynn."

Pustilago hypodytes (Schlecht).—"The specimen sent was found by Mr. E. J. Tatum, near Salisbury, in June last. The host is *Bromus erectus*—a plant on which the fungus is rare in England. It is, of course, extremely improbable that the various forms on *Triticum repens*, *Elymus arvensis*, and *Bromus erectus* are identical."

Lucombe Oak.—Mr. ELWES exhibited acorns and cups from a tree, the latter being like those of *Quercus cerris*; this and the Cork Oak having been the parents of this hybrid. It was seldom that the acorns were not attacked by grubs. The numerous specimens of the *Lucombe Oak* in existence are grafted plants.

LINNEAN.

NOVEMBER 17, 1904.—Prof. W. A. Herdman, F.R.S., President, in the Chair.

Her Grace Mary du Caurey Russell, Duchess of Bedford, Miss Margaret Benson, D.Sc. Lond., Mr. Samuel Edward Chandler, B.Sc., Mrs. Catherine Crisp, Miss Alice Laura Embleton, B.Sc., Mrs. Marion Sarah Ogilvie-Farquharson, F.R.M.S., of Haughton, Mrs. Grace Frankland, F.R.M.S., (Mrs.) Dr. Maria Ogilvie-Gordon, Ph.D. Munich, D.Sc. Lond., Miss Gullielma Lister, Miss Ethel Sargent, Mr. Arthur Everett Shipley, M.A., F.R.S., Miss Sarah Marianne Silver, Mrs. Constance Percy Sladen, Miss Annie Lorrain Smith, Mrs. Mary Anne Stebbing, Miss Emma Louisa Turner, Mr. William James Tutchner, Mrs. Lilian Jane Veley and Miss Ellen Willmott, were proposed as Fellows.

Mr. H. E. H. SMEDLEY, F.L.S., F.G.S., exhibited forty-one Models of Paleozoic Seeds and Cones.

Lord AVEBURY gave a summary, illustrated by lantern-slides, of a paper entitled "Note on the Shape of the Stems of Plants." It pointed out that while most plants had round stems, in some they were triangular, some quadrangular, &c., but that so far as he knew no attempt had been made to explain these differences. He thought they could however be accounted for on mechanical principles. In building, when the main object was to meet a strain in one direction, the well-known girder was the most economical disposition of material. In a tree-stem it was necessary to resist strain coming from all directions, and the woody tissues acted as a circular series of girders. In herbs with opposite leaves the strains were mainly in two directions, and were met by two opposite girders, thus giving the quadrangular stem. Taking our native flora he showed that all herbs with quadrangular stems had opposite leaves, and as a rule herbs with opposite leaves had quadrangular stems. Sedges had triangular stems and grasses round stems, and while sedges had the leaves in threes, those of grasses were distichous. Pentagonal stems might be accounted for in a similar way, and incidentally this threw light on the petals of so many flowers. Thus plants had adopted, millions of years ago, principles of construction which have gradually been worked out by the skill and science of our architects and engineers.

Mr. G. BOWDLER BUCKTON, F.R.S., F.L.S., the author of "A Monograph of Membracidae," and other important entomological works, contributed a paper entitled "Observations on some undescribed or little-known Species of Hemiptera Homoptera of the family Membracidae," illustrated by coloured sketches. In the absence of the author the paper was read in abstract by Mr. W. F. Kirby.

Prof. POULTON has explained the significance of the strange forms of some of the Membracidae by their dependence on environment, and the requirements of mimicry; and the Rev. Canon FOWLER has also given information respecting the economics of the species, and their maintenance during the struggle for life.

The next General Meeting of the Society will be held on Thursday, December 1, 1904, at 8 P.M. Professor S. H. VINES, F.R.S., V.P.L.S., will give a discourse on "Proteid Digestion in Animals and Plants." The General Meeting will be made special for electing five additional Councillors under the Supplemental Charter, according to the notice sent to each Fellow in the United Kingdom.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 10.—At the meeting held on the above date, S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), exhibited a beautiful form of *Cattleya labiata* var. *Lady Duff*, with white sepals and petals and a delicately-coloured lip; it is quite distinct, and one of the best albino forms (First-class Certificate). *Cypripedium* × "*Thalia*," West Point variety, from the same collection, received an Award of Merit.

E. ROGERSON, Esq., Didsbury (gr., Mr. Blomley), staged a grand collection of plants, for which a Silver-

gilt Medal was awarded. *Laelio-Cattleya* × *rubens* var. "*Miss Rogerson*" was awarded a First-class Certificate. The parentage is *Laelia praeatans* × *Cattleya Hardyana* var. *alba*. It is a charming hybrid, and a welcome addition. *Cattleya* × *Fabia* and *C.* × *fulvescens* received Awards of Merit.

T. STATTER, Esq., Whitefield (gr., Mr. Johnson), exhibited a small group of *Cypripediums* (Vote of Thanks).

Dr. HODGKINSON, Wilmslow (gr., Mr. Woore), gained a First-class Certificate for *Cattleya* × *Fabia* var. *Dorothy*.

Messrs. SANDER & SONS, St. Albans, exhibited *Laelio-Cattleya* × *Ardernae*, a fine hybrid from *Laelia Digbyana* × *L. C.* × *callistoglossa* (First-class Certificate).

Mr. W. HOLMES, Timperley, exhibited *Cymbidium* × *Holmesii*, with two good spikes.

Messrs. A. J. KEELING & SONS, Bradford, staged a group of *Cypripediums*, receiving an Award of Merit for *C. insignis* var. *aureola*. P. W.

THE BRITISH GARDENERS' ASSOCIATION.

MEETING AT BOURNEMOUTH.

NOVEMBER 15.—The Bournemouth, Parkstone, Wimborne, and Highcliffe Gardeners' Associations held a special meeting in the Bournemouth Arcade on the above date to hear an address upon the "Aims and Objects of the British Gardeners' Association," by Mr. Watson, the Honorary Secretary. The chair was taken by Mr. Stevenson, Superintendent of Public Gardens, Bournemouth, and about 100 gardeners were present, some having come a distance of 15 miles by brake to attend the meeting.

Mr. Watson sketched the history of the Association up to the election of the present Committee of Selection, whose duties were, he said, limited to the selection from applicants for membership of all who fulfil the conditions stated in the prospectus until 500 members have joined, and to take such steps as appeared desirable to ensure the success of the movement. One of these was to hold meetings of gardeners in towns and districts throughout the country, for the purpose of placing the aims and objects of the Association clearly before those whose interests it was intended to promote. He read the prospectus, and explained those portions of it which had been misunderstood in some quarters, insisting on the necessity of limiting membership to those who were qualified by training and experience, and pointing out that the Executive Council of the Association would be elected by the 500 members who were the first to join. It would then be within their powers to reconsider the rules and to make such modifications or additions as might appear desirable to meet the wishes of all sections. Adverting to the scale of wages, hours of labour, and other conditions of employment recommended in the prospectus, Mr. Watson said that a standard rate of pay, &c., was now fixed for all important industries in this country, and he saw no great difficulty in the way of fixing an acceptable scale for gardeners. A carefully chosen executive that would do all that was reasonable and within the law to secure these terms would be helpful to employers as well as to employed. Although it was impossible to make common arrangements for numbers of men without running counter to some of them, the greatest good of the greatest number was worth striving for. A well-trained gardener was worth as much in the country as in the town; at any rate, the knowledge and experience of a good gardener surely entitled him to the conditions that are now conceded to an ordinary mechanic. He believed that it would now be considered nothing short of a national calamity if the organisations which controlled and regulated the conditions of employment in so many departments of labour were to cease operations. The greatest of all these organisations was the Civil Service, whilst county councils, corporations, and every local governing body were, owing to the influence of public opinion, conceding to their workmen reasonable conditions of employment. He might say that in some towns the road sweepers were better paid than the average gardener. For instance, the Battersea Borough Council employed no able-bodied adult, male or female, under 30s. per week of 48 hours, and allowed twelve days holiday annually, with pay.

Gardening was in this country rapidly becoming as important an industry as farming, the intensive cultivation of the gardener proving remunerative where farming did not pay. We must have large supplies of plants and flowers, as well as of fruits and vegetables, and those people talked nonsense who said that an improvement in the conditions of labour of these who produce these things would prove destructive. Flowers and plants might be termed luxuries, but so were pictures, furniture, costly dress, wines, horses, game, &c. He was, however, prepared to show that many gardens could be better managed at less cost than at present if they were better staffed. The

waste of effort, of material, of labour, that might be seen in some gardens was deplorable.

Could there be found among gardeners that spirit of citizenship, that willingness to co-operate which had led to such improvement in other departments of industry? There must be prominent in the mind of the gardener who thinks of the future that comfortably situated though he may be to-day, to-morrow may see him out of employment. An association such as this they were now forming would be in a position to befriend him, as every member would be his friend. If he was secure in a comfortable situation the improved status that the Association would secure for his class ought to count for something; and if he wanted none of these things, then he was in a position to help those who were perhaps as worthy though less fortunate than he. The defection of a portion would weaken the rest. A house divided against itself could not stand. The object was to get all to think alike, and then they would be in a position to do some good. Unfortunately some head gardeners were in this matter less reasonable than their employers. When gardeners had got all that the prospectus recommended, they would still be a hard-worked, moderately-paid body of men.

A resolution to form a branch of the British Gardeners' Association in Bournemouth was passed by a two-thirds majority.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 15, 16.—The annual exhibition was held in the Guildhall—a charming site for such a display, and was in every respect a great success. The entries far exceeded those of other years.

Plants were shown well. A special feature is made of Chrysanthemums for conservatory decoration, the Society encouraging dwarf plants having good foliage and high-class blooms.

For nine plants of Chrysanthemums distinct, Mr. G. Adams, gr. to Col. DICKENS, Edge Hill, Winchester, easily won the 1st prize with such varieties as *W. T. Church*, *F. S. Vallis*, and *Kate Bremhead*. Mr. Gigg, gr. to the Rev. R. M. MOORSON, Holyrood, Winchester, was 2nd.

For a group of Chrysanthemums Mr. W. Pearce, gr. to H. JOHNSON, Esq., Northgate Place, Winchester, was 1st with dwarf effectively arranged plants.

For a group of miscellaneous plants arranged for effect, Mr. E. Leng, gr. to F. C. BUCH, Esq., Clevely, Winchester, was distinctly ahead with suitable subjects effectively displayed.

Primulas are invariably well shown at Winchester. For twelve plants of this flower Mr. ADAMS won with double varieties excellently flowered.

CUT BLOOMS.

Cut Chrysanthemum flowers were numerous and good. The leading class here is for forty-eight blooms, half Japanese and the remainder incurved varieties. Four competed, the best coming from Mr. G. Hall, gr. to Lady ASHBURTON, Melchet Court, Romsey, who staged a grand set of Japanese and a good board of incurved varieties. Mr. W. G. ADAMS, The Strand, Southampton, was 2nd, with superior Incurveds, but only moderate flowers of the Japanese type.

Japanese varieties were largely shown, Mr. HALL winning for thirty-six flowers with well-known varieties; Mr. J. Wasley, gr. to J. B. TAYLOR, Esq., Sherfield Manor, Basingstoke, being a close 2nd.

In the class for twenty-four flowers, Mr. Dawes, gr. to Mrs. OGILVIE, Resecroft, Hambledon, Hants, was successful with good specimens.

Incurved varieties were much better than they have been at many shows. For twenty-four blooms, Mr. MARSH, with medium-sized specimens, won the 1st prize, as he did also for twelve varieties.

Single-flowered varieties were a feature, so well were they staged. Mr. G. Ellwood, gr. to W. H. MYERS, Esq., M.P., Swanmore House, Bishop's Waltham, was ahead of all others with choice varieties effectively arranged.

SPECIAL CLASSES.

Several classes were set apart for ladies, and were well filled with superior exhibits.

For the most tastefully arranged dinner-table decoration (Orchids excluded) six competed. Miss F. M. MOLYNEUX, Swanmore Farm, Bishop's Waltham, was 1st, with pink Carnations and Lily of the Valley, with suitable coloured foliage and greenery. Mrs. E. LADHAMS, Shirley, Southampton, was 2nd, with pink Roses and Lily of the Valley.

For the most tastefully arranged stand of flowers, &c., Miss MOLYNEUX was again successful, Mrs. JEFFERY, Nursling, Southampton, being 2nd.

FRUIT was shown plentifully, and it was of good quality. Mr. Mitchell, gr. to J. WILLIS FLEMING, Esq., Chilwerth Manor, Romsey, had the best Grapes. Mr. T. Hall, gr. to Sir S. MONTAGUE, Bart., South Stenham House, Southampton, the finest Apples.

VEGETABLES made a display in themselves. Mr. ELLWOOD won 1st prizes in three classes for collections.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 16, 17.—This Society held a most successful show in every respect in the Colston Hall, Bristol, on the above dates. The large hall, with its grand tier, the lesser hall, and the lobby were all fully occupied with exhibits of plants, Chrysanthemum blooms, fruit, vegetables, &c. Groups of Chrysanthemums were especially good, as were also the ornamental foliage plants, Ferns, &c., staged in the various classes devoted to them, and arranged down the centre of the hall. Grapes, Pears, and Apples were also splendidly shown, while the Chrysanthemum blooms taken collectively were remarkably good in quality, though those staged in the leading class for thirty-six Japanese varieties, good as they undoubtedly were, were not quite equal in quality to what have sometimes been shown at Bristol. Taking the show generally, it was one of the best this Society has ever held, and that of the Bristol Amateur Horticultural Society, which was held in conjunction with it, was equally meritorious. Each Society may be congratulated upon the excellent results of their endeavours.

CUT BLOOMS.

Thirty-six Japanese Chrysanthemum Blooms.—A Challenge Vase valued at 15 guineas was included in the 1st prize in this class, but it has to be won three times by an exhibitor before it absolutely becomes his property. Last year the Vase was secured by Mr. Vallis, of Chippenham, who did not put in an appearance this season. THE FLOWER AND FRUIT COMPANY were the leading exhibitors amongst six, staging solid fresh blooms of F. S. Vallis, Guy Hamilton, Mrs. F. W. Vallis, W. Buchan, Madame Carnot, J. H. Silsbury, W. R. Church, Mrs. E. Thirkell, President Viger, Bessie Godfrey, Madame P. Radaelli, C. J. Salter, Mrs. J. Brunt, Calvat's Sun, Mrs. J. Lewis, Mrs. Barkley, Mrs. R. Darby, R. Upton, &c. Mr. F. May, gr. to H. O. LORD, Esq., Lilley Brook, Cheltenham, was a close 2nd, and staged many similar varieties to those in the 1st prize collection.

Twenty-four Blooms, Incurved.—Mr. S. W. DRAKE, Cardiff, was a good 1st with large, splendidly-finished blooms, including the varieties Frank Hammond, Ma Perfection, J. Eadie, Ialene, Madame Ferlat, Pantia Ralli, Duchess of Fife, Bonita, Miss Nellie Southam, Miss E. Seward, Snowdrift, Nellie S. Threlfall, George Lock, Mrs. F. Judson, G. Hunt, &c.

For Twelve Incurveds Mr. H. Baker, gr. to Dr. CROPPER, Mount Ballan, Chepstow, was the leading exhibitor with a capital stand, comprising the varieties Miss N. Southam, Mrs. F. Judson, Miss C. Gaines, Frank Hammond, Mrs. C. Crook, Lady Isabel, Ialene, General Symonds, Ralph Hutton, W. Higgs, Duchess of Fife and C. H. Curtis. Mr. W. Strugnell, gr. to the Hon. W. LONG, was 2nd, and staged excellent blooms of Mrs. F. Judson, Nellie Stevens, Snowfall, Miss R. Hunt, Louisa Giles, &c.

Twelve Japanese Chrysanthemums.—This made an excellent class, in which many of the better blooms in the show were staged. Amongst eight exhibitors, Mr. A. BAKER took leading honours, with a grand deep-coloured bloom of Mrs. F. W. Vallis (which secured the Silver Medal of the National Chrysanthemum Society for being the best bloom in the show), General Hutton, Madame P. Radaelli, F. S. Vallis, Henry Perkins, R. Upton, Mrs. Barkley, Dorothy Pywell, W. R. Church, W. Duckham, Mrs. Mease and Godfrey's Pride. Mr. J. C. Pope, gr. to C. BAILEY, Esq., was 2nd with another capital stand, including F. S. Vallis, Godfrey's Pride, Guy Hamilton, R. Upton, Mrs. J. Bryant, Mrs. Barkley, Nellie Perkins and Dorothy Pywell. In a similar class devoted to amateurs and gentlemen's gardeners, Mr. Pope was placed 1st, followed by Mr. Baker and Mr. Runnales. There were eight entries in this class.

Twelve large-flowered Anemone Varieties.—This made an interesting class. Mr. E. W. E. Haek, gr. to Mrs. W. PETHICK, who was 1st, staged good blooms of Mrs. R. Dunn, Owen's Perfection, Delaware, La Chalonais, Mr. H. Gardiner, Enterprise, &c. Mr. STRUGNELL, who was 2nd, staged Enterprise, Mabel Miller, Madame Samson, Holeyone, &c. There were three exhibitors.

GROUPS.

There were four excellent groups of Chrysanthemums arranged in a space of 50 square feet, the best being from Mr. G. W. Harford, gr. to H. V. BARNARD, Esq. This exhibitor's plants carried large fresh blooms and fine foliage, while the common mistake of crowding was avoided. Mr. McCulloch, gr. to Alderman COLTHURST GODWIN, who was a close 2nd, had plants with equally good flowers, but the effect of the group was marred by the front plants being over-large.

Group of Chrysanthemums in a space of 50 square feet, arranged with Ferns and ornamental foliage plants.—Only one group was arranged in this class, but it was an exceedingly elegant one. The Chrysanthemums were gracefully interspersed with light

Palms, Eulalias, Crotons, &c. It was arranged by Mr. Bannister, gr. to Mrs. H. ST. VINCENT AMES, Cote House, Westbury-on-Trym.

Group of Miscellaneous Plants, arranged in a space of 50 square feet.—There were three good exhibits, and they made a bright feature at one end of the lesser hall. Mr. F. Cane, gr. to Dr. R. C. W. EAGER, took the lead with a group containing principally Orchids. Messrs. McCULLOCK and J. C. Curtis, gr. to W. HOWELL DAVIES, Esq., were placed 2nd and 3rd respectively.

FRUIT.

Seven exhibitors entered in the class for six dishes of fruit, Mr. Raikes, gr. to W. A. F. POWELL, Esq., being placed 1st with good Muscat of Alexandria and Alicante Grapes, Beurré Diel and Marie Louise Pears, Cox's Orange Pippin Apples, and a Melon. Mr. Strugnell, gr. to the Rt. Hon. W. LONG, Rood Ashton Park, was 2nd.

There were also numerous classes for Grapes, Apples, and Pears.

VEGETABLES.

Liberal prizes were offered by Messrs. J. Carter & Co., Messrs. J. Garaway & Co., Messrs. Sutton & Sons, and The Ichthemie Guano Company for collections of vegetables. In these classes there were excellent exhibits staged. Mr. BANNISTER was 1st both for the prizes offered by Messrs. Carter & Co. and Messrs. Sutton & Sons. Mr. McCULLOCK was 1st for Messrs. J. Garaway & Co.'s prizes; and Mr. MAY was 1st for The Ichthemie Guano Company's prizes.

MISCELLANEOUS EXHIBITS.

MESSRS. GARAWAY & Co. staged 100 splendid dishes of Apples. Messrs. COOLING & SONS, of Bath, had a similar exhibit. Mr. GODFREY, of Exmouth, staged a large stand of cut blooms of Chrysanthemums and zonal Pelargoniums. Messrs. PARKER & SONS, Royal Promenade, Bristol, arranged a display of floral devices; and a similar display was made by Messrs. C. DORSON & Co., High Street, Bristol. Messrs. CARTER & Co., High Holborn, arranged an excellent collection of vegetables. Mr. VINCENT SLADE, of Taunton, staged a group of fifty varieties of zonal Pelargoniums. Messrs. BLACKMORE & LANGDON, of Twerton Hill, staged collections of Carnations, Cyclamens, and Begonias. Messrs. AMBROSE & SON, of Cheshunt, had Roses, Carnations, Lily of the Valley, &c.

CHESTER PAXTON SOCIETY'S EXHIBITION.

NOVEMBER 16, 17.—The annual exhibition of the Chester Paxton Society, held in the Town Hall on the above dates, surpassed all former exhibitions of this Society both in extent and merit. The groups of Chrysanthemums were the most noteworthy feature of the exhibition. There were seven entries in the group classes. The President of the Society, Major MACGILLYCUDDY (gr. to Mr. E. Stubbs), scored a signal success by winning the 1st prize in both classes, thus taking his own Challenge Cup, as well as the one presented by T. Gibbons Frost, Esq. In the class for Japanese and incurved, Mr. GIBBONS FROST (gr. to Mr. Gilbert) took 2nd place with a group which was little inferior to that which obtained 1st prize. The 3rd prize was awarded to E. DIXON, Esq., Littleton Hall (gr. to Mr. J. Dutton); this group was beautifully arranged.

In the class for groups composed of plants of single varieties, the PRESIDENT, as already stated, took the 1st prize; with the COUNTY ASYLUM AUTHORITIES, per Dr. Lawrence, who were awarded the 1st prize last year, 2nd. A 3rd prize was awarded to JOHN FROST, Esq. (gr. to Mr. Seddon), with a very prettily arranged group. In the class for eighteen cut blooms of six distinct Japanese varieties, first honours fell to Sir GEORGE MEYRICK, Bodorgan, Anglesey (gr. to Mr. W. Pilgrim), who also took the 1st prize in a similar class for twelve blooms. The 2nd prize for eighteen blooms of Japanese varieties went to Mr. C. THRELFALL, Telstone Lodge, Tarporley, for a meritorious exhibit; and the 3rd to a new exhibitor, Mr. W. E. WHINERAT, Neston. Other successful exhibitors in these classes were Mr. EDWARD DIXON, who took the 1st prize for five Japanese blooms; Mr. F. W. SOAMES, Wrexham, and Mr. R. BROCKLEBANK, Haughton Hall, Tarporley. Miss HUMBERSTON, of Newton Hall (gr. to Mr. R. Wakefield), was the winner of the 1st prize for the best collection of single varieties naturally grown.

In the classes for fruit, a large and attractive feature was the display in the competition for the best collection of twenty-four distinct varieties of kitchen and dessert Apples. The 1st prize was awarded to Mr. J. SAUNDERSON, Bodnant, whose fruit was better coloured and had rather more finish than that of local growers. In the dessert classes the Rev. L. GARNETT, Mr. W. G. T. CURRIE, Major MACGILLYCUDDY, and Sir GEORGE MEYRICK were the leading prize-winners. The whole of the Apples, especially the dessert varieties, were remarkably fine.

Honorary exhibits were staged by Messrs. SUTTON & SONS, Reading; Messrs. DICKSONS, Ltd., Chester; Messrs. CLIBBRANS, Altrincham; Mr. NORMAN DAVIS, Framfield, Sussex, and Messrs. McHATTIE & Co., Chester.

LIVERPOOL CHRYSANTHEMUM.

NOVEMBER 16, 17.—The twenty-fifth autumn show of Chrysanthemums, plants, and fruit of this Society was held in St. George's Hall on the above dates. The entries were far more numerous than in previous shows. The competition was keen in most classes, the exhibits being of the highest quality.

The 1st prize for a group of Chrysanthemums and foliage plants arranged for effect, not to exceed 60 square feet in area, was won by Alderman W. H. WATTS (gr. to Mr. J. Bracegirdle). 2nd, Dr. COOK (gr. to G. Osborne). 3rd, Mrs. GILMOUR (gr. to John Stoney).

The principal feature of this show, and one which is competed for with keen interest, is the Society's Silver Challenge Cup, value 20 guineas. This is given for twenty-four Japanese and twenty-four incurved Chrysanthemums. The trophy was secured by THE CHESHIRE LINES COMMITTEE (gr. to J. Young), with excellent flowers. 2nd, E. ELLIS, Esq. (gr. to Mr. J. Davies).

In the class for eighteen incurved Chrysanthemums Mr. A. COOK secured the 1st prize; Colonel THOMAS GEE being 2nd, with Mr. E. WHITLEY, 3rd.

The prize for eighteen Japanese blooms was won by Mr. T. HENSHAW; followed by Sir W. B. FORWOOD, 2nd, and Mr. A. COOK, 3rd.

In the class for six vases of single Chrysanthemums Mrs. COPE was 1st; Sir W. H. TATE, 2nd; and Mr. F. H. GOSSAGE, 3rd.

The best six Begonias of the variety Gloire de Lorraine grown in 6-inch pots were exhibited by Mr. L. NOBLETT.

Other successful exhibitors were Messrs. Arthur Earle, John Findlay, A. Mackenzie Smith, Mrs. Harding, F. Stewart, H. Cunningham, J. Boulton, Mrs. Duncan, Mrs. Kitchen, and Mrs. F. A. Vlasto.

The Fruit classes brought many competitors. 1st prize for six dishes of fruit was won by Colonel R. IRELAND-BLACKBURN, C.B.

For four bunches of Grapes, two black and two white varieties, Mrs. H. A. BRIGHT secured the 1st prize.

YORK CHRYSANTHEMUM.

NOVEMBER 16, 17, 18.—The annual autumn exhibition, held in the Exhibition Buildings on these dates was one of the best of the series held at York.

GROUPS.

Groups of Chrysanthemums and foliage plants arranged for effect are finer here than elsewhere. In this class five competitors entered, resulting in a fine display down one side of the hall. Mr. W. Townsend, gr. to E. B. FABER, Esq., M.P., Belvedere, Harrogate, was awarded the 1st prize. Mr. G. Jarvis, gr. to Mrs. WHITTAKER, Cliff House, Hesse, Hull, was a good 2nd; and Mr. E. COTTAM, Hull, was 3rd.

Pillar groups are another feature at York; these are 17 feet in height, the base to measure 8 feet by 6 feet. Miscellaneous plants are used in the design. Four exhibits were staged, making an effective display. Messrs. R. SIMPSON & SON, Selby, won the premier award. Mr. E. COTTAM was a good 2nd.

Chrysanthemum groups were imposing. The first collection covered 80 square feet, and was arranged by Mr. J. W. HIELDS, Acomb, York. The plants were extremely well grown and effectively displayed. Mr. W. Wilkinson, gr. to W. E. SMITH, Esq., Selby, was 2nd with a good group.

Specimen plant classes were well filled. Mr. Everard, gr. to Mrs. GUTCH, won all the 1st prizes in the open classes with well-grown plants of popular varieties.

CUT BLOOMS.

Cut flowers made a bright display. The principal class was for eighteen incurved and for as many Japanese Chrysanthemums, in not fewer than twelve varieties in each section, and for which the Society gave £10 and the Citizens' Challenge Cup, valued at £20. Mr. W. Mease, gr. to A. TATE, Esq., Downside, Leatherhead, Surrey, was an easy 1st, with full-sized, shapely blooms of "incurved" and good Japanese. Mr. Mease having previously won the Cup twice, it now becomes his property. Mr. Folkard, gr. to Lady WALKER, Sandhutton Hall, York, was 2nd.

Mr. MEASE also won the 1st prize for eighteen "incurveds," having popular varieties in good condition.

Mr. McPherson, gr. to Lord LONDESborough, Market Weighton, won in the class for twelve incurved varieties with excellent examples.

Mr. MEASE was again successful with eighteen Japanese flowers, distinct, showing handsome blooms of leading varieties.

Mr. FOLKARD won for twelve Japanese Chrysanthemums, distinct.

Mr. Williams, gr. to the Earl of FEVERSHAM, Duncombe Park, Helmsley, had the best set of six flowers of any one white variety of Chrysanthemum in his blooms of Miss Elsie Fulton. This was an

interesting class, as was also that for any one yellow variety. In this class F. S. Vallis was the best variety, shown by Mr. FOLKARD.

For any other colour Mr. WILLIAMS won the 1st place with fine blooms of Mrs. F. W. Vallis.

Single-flowered varieties in vases were an attractive feature. Mr. EVERARD had the best exhibit of six varieties, distinct.

Decorative varieties are always a strong class at York. For twelve varieties distinct, three sprays of each, Messrs. THEAKSTONE & SON, Hull Road, York, were 1st with varieties that well illustrated this type.

Mr. G. Russell, gr. to Sir C. REID, K.C.B., Dringthorpe, York, staged a remarkably fine exhibit of specimen plants of single-flowered Chrysanthemums, for which a Gold Medal was awarded.

Fruit and vegetables were shown well. E. M.

BARNESLEY CHRYSANTHEMUM.

NOVEMBER 17, 18.—The eighteenth anniversary of this Society took place in the Public Hall on the above dates, when the exhibition of Chrysanthemums, other flowers, fruit, and vegetables surpassed all previous records. The opening ceremony, which partook of a civic character, was attended by a larger number of people than ever before in the Society's history. The entries showed an increase of 150 upon the best record of the Society's history. In every class there was a decided improvement, and competition was keen, though it is to be regretted there were no entries for the prize of £16 offered for groups.

The chief prize of the show was taken by Mr. A. Alderman, gr. to Mr. J. D. ELLIS, of Worksop, with his stand of eighteen Japanese Chrysanthemum flowers, including fine specimens of F. S. Vallis, Henry Parkins, and Godfrey's Pride. The prize carried with it "The Micklethwaite Trophy," a beautiful silver Rose-bowl, and a Gold Medal for the gardener. Mr. W. A. H. BASS, of Burton-on-Trent, secured 2nd honours. Mr. HENRY WILCOCKES, of Cottingham, was 3rd.

Mr. BASS took premier position in the class for a large collection of "incurveds" with handsome specimens of P. Ralli and Chrys. Bruant. Mr. ELLIS was a good 2nd. With the varieties Pania Ralli and Golden Ferlat, Mr. ELLIS secured 1st honours in two other classes for incurved varieties.

A tray of twelve Japanese varieties staged by Mr. BASS (gr., Mr. R. Nisbett) was 1st in this class. Mr. ELLIS, 2nd.

Mr. BLAIR, Trentham Gardens, Stoke-on-Trent, in the class for eighteen incurved sections, secured 1st prize. The decorative classes made a creditable show.

The best single vase of Chrysanthemums was arranged by Mr. B. FISH, Cawthorne. 2nd, Mr. R. P. WALLER, Barnesley.

For six vases of Chrysanthemums, Mr. F. RIMMINGTON, Worsbro, was awarded 1st prize; with Mr. A. GRAY, Barnesley, 2nd.

In the class for six vases of Chrysanthemums of distinct varieties, Mr. J. D. ELLIS took premier place; with Mr. P. BLAIR, 2nd.

A valuable Cup, presented by several patrons of the Society, for twenty-four cut blooms of incurved and Japanese varieties was won by Mr. B. FISH, of Cawthorne.

FRUIT.

Mr. BLAIR secured 1st prize for a collection. Mr. McPHERSON, of Market Weighton, 2nd; and Mr. T. HAYNE, of Carlton, 3rd.

The best Grapes were those of Mr. McPHERSON.

The Countess of ROSSE was awarded 1st prize for dessert Apples; Mr. T. HAYNE being 2nd. Mr. McPHERSON had also the best cooking Apples.

The best dessert Pears came from Mr. C. FOX, Barnesley; Sir SPENCER STANHOPE taking 2nd prize.

The vegetables staged were of good merit, especially Potatoes. The local Cottagers' classes were well filled and were quite in keeping with the other sections of the show.

SCOTTISH HORTICULTURAL.

CHRYSANTHEMUM SHOW IN EDINBURGH.

NOVEMBER 17, 18, 19.—The great Chrysanthemum Show of the Scottish Horticultural Association held on the above dates, was again a complete success, the cut blooms being quite up to the average quality and superior to those exhibited last year, while the fruit, especially Apples and Grapes, constituted a feature only second in merit to the Chrysanthemums. Vegetables were characterised by a great advance on previous years. Trade exhibits were just spared from being an extinct custom by a few that were shown, mostly from a distance. The attendance on the first day was very large, the receipts amounting to £75 more than those of the opening day last year, or to £110 17s. The exhibition was opened by the Lord Provost, Sir Robert Cranston. It is unfortunately impossible to give the names and complete addresses of the exhibitors, owing to the custom of the Association to work by numbered cards, and delay in placing the prize tickets, on which only the name and address of the gardener and not that of his employer are recorded.

The City of Edinburgh Queen Victoria Memorial Prize (open to all), fifteen vases of Japanese blooms in fifteen varieties, three blooms of each; plate value £20 and £10, £20, £15, £10, £5. As there were only five who staged for these valuable prizes, it virtually was a question who was to be placed highest. Mr. NICOLL, who was 1st last year, brought a grand lot of blooms, and Mr. LUNT was up to his customary good form, staging magnificent examples in his usual high-class style. With these Mr. LUNT secured the 1st prize; Mr. NICOLL being a good 2nd. There was nothing novel among the varieties, Mr. LUNT's comprising Miss O. Millar, Miss M. Ware (lovely blooms), Mrs. R. Cadbury, Mrs. Barkley (very fine), Princess Brancova, Mrs. F. W. Vallis (extra fine), Miss Stopford (very fine), Loveliness, Calvat 99, H. Stowe, W. R. Church, E. Shrimpton (very fine), Lady Conyers (fine), Bessie Godfrey, and G. Penford. Mr. NICOLL staged to a large extent the same sorts, and the prizes as a whole were awarded to Mr. T. Lunt, gr. to Capt. STIRLING, Keir House, 1st; Mr. NICOLL, Rossie Priory, Perth, 2nd; Mr. BEISANT, Castle Huntly, Perth, 3rd; Mr. C. BECKETT, Chilton Lodge, Hungerford, 4th, and Mr. NICHOLSON, Strathallan Castle, Perth, 5th.

The Society's "Queen Alexandra" prize was offered for six vases Japanese, in six varieties, three blooms of each, confined to growers within the municipal boundaries of Edinburgh and Leith. The blooms in this class were much superior to those staged last year, Mr. FRAZER, Kilravock, being 1st with fresh, well-coloured blooms; and Mr. WALDIE LAMONT, Colinton Road, 2nd; Mr. MICHIE, Boroughfield, 3rd; and Mr. CHAPLIN, Ravenswood, 4th.

The Scottish Challenge Cup, with various money prizes, was offered to Scottish growers only, for eight vases of Japanese blooms in eight varieties, three blooms of each. As many as thirteen staged in this popular class, those competing in Classes 1 and 2 being debarred. As a whole, the display was one of the best, if not the very best, ever made for these prizes, Mr. KIDD, gr. to Lord ELPHINSTONE, Carberry Tower, Musselburgh, securing the much-coveted Cup with good fresh blooms of the following varieties: Mr. F. S. Vallis, Geo. Lawrence, Madame P. Radaelli, H. Stowe, W. R. Church, Miss M. Ware, and Mrs. G. Mileham. Mr. STEWART, Tuliallan Castle, 2nd; Mr. R. ADDISON, Luchie, North Berwick, 3rd; Mr. P. McLACHLAN, Gracemount, Liberton, 4th; and Mr. STEWART, Dunkeld, 5th.

The succeeding classes were open to gardeners and amateurs. That for six vases of Japanese flowers in six varieties, three blooms in each, brought out a strong competition, fifteen staging, and Mr. NICOLL secured 1st prize with very fine examples of F. S. Vallis, Mrs. F. W. Vallis, Bessie Godfrey, E. Shrimpton, Mrs. Barkley, and Madame R. Cadbury. Mr. LUNT was 2nd; and Mr. C. BECKETT, 3rd; Mr. BEISANT, 4th; and Mr. CUMMING, Grantully Castle, 5th.

For one variety staged in two vases, three blooms in each, Mr. LUNT was 1st with perfectly-developed blooms of Mrs. F. W. Vallis.

In a class for twelve distinct varieties in four vases, three blooms in each, there were eleven exhibits, Mr. NICOLL being placed 1st; showing of pink flowers, H. Stowe, Mrs. N. H. Lewis, Mrs. Barkley; white, M. Gustave Henry, Madame R. Cadbury, and E. Shrimpton; red, Mrs. F. W. Vallis, J. H. Silsbury, and Mafeking Hero; yellow, F. S. Vallis, Ethel Fitzroy, and J. R. Upton. Mr. LUNT was 2nd.

The three following classes were confined to growers who had not competed in any of the foregoing classes.

In that for four vases of Japanese blooms, in four varieties, three blooms of each, Mr. BARR, Arnsbrae, Cambus, won 1st prize; and Mr. McKENZIE, Cambus, 2nd prize.

For six distinct varieties in two vases, three blooms in each, Mr. A. GAULD, Claremont, Alloa, was 1st; and Mr. LUMLEY, Broomhall, 2nd.

For single varieties there was a very large competition, but the arrangement of the flowers and foliage was mostly unsatisfactory, and the vases were too closely staged, the flowers crushing into each other. For three varieties, shown in vases, Mr. KIDD won 1st prize; and Mr. HAY, Houghton Hall, Carlisle, 2nd prize.

The same faults characterised the next class, which also was well filled. It was for three decorative varieties, in vases, eighteen sprays to be shown in each vase, with any foliage. Mr. Galloway, gr. to Earl of WEMYSS, Gosford, Longniddry, was 1st; and Mr. G. Scott, 2nd.

Of incurved varieties it may be said they were represented and that is all; there were two classes, but only a few entries, Mr. MARTIN, Corndean Hall, Winchester, securing the 1st prizes in the two classes set apart for these.

The Silver Medal for the best Japanese bloom was awarded to Mr. LUNT for a specimen of F. W. Vallis, shown in the Queen Victoria Memorial class. Messrs. WELLS & Co., Earlswood, Surrey, were awarded the 1st prize for the best new Chrysanthemum, the 2nd prize going to Mr. N. MOLYNEUX, Wickham, Hants.

Bouquets, épergnes, &c., had a number of classes devoted to them, the chief of which was the "Trade Floral Exhibit," open to all. Messrs. TODD & Co.,

Shandwick Place, secured the £20 prize with a varied collection of floral curiosities, including a Lady's hat and a sundial. The bouquets comprised in this exhibit were exquisite, especially one composed mainly of brown and yellow *Oncidiums*, and a few *Cypripediums*. The 3rd prize was awarded to Mr. JONSON, Portobello.

PLANTS.

There has been a steady improvement in Chrysanthemum plants. The Pompons are, however, not nearly so well done as the Japanese varieties.

For six large-flowered specimens, and for four similar specimens, Mr. W. PULMAN, Hollywood, Edinburgh, was 1st with really excellent plants, and Mr. MICHIE, Murrayfield, 2nd. Mr. PULMAN had also the six best Pompons; and Mr. MICHIE was 2nd. These competitors were largely successful too in the smaller classes, and to Mr. PULMAN was awarded the Silver Medal for the best specimen plant.

A few classes were set apart for amateurs or those not employing a gardener.

Roman Hyacinths were exhibited particularly well. Mr. GOWANLOCK having the best six zonal Pelargoniums. Lily of the Valley, Begonia Gloire de Lorraine, and Chinese Primulas may be mentioned as being also staged in first-class form. Winter Carnations were rather small as plants, but well bloomed.

GROUPS.

For a group of Chrysanthemums and other flowering and foliage plants arranged for effect, Chrysanthemums to be the leading feature, there were a few good arrangements. That favoured by the judges, and to which the 1st prize was awarded, was a rather heavy one from Mr. JARDINE, Ravelstone, in which single-stemmed Chrysanthemums with fine blooms formed the chief feature, with Gloire de Lorraine Begonias and Ferns mainly for an edging. Mr. DAVIS was 2nd with a well-arranged group, and Mr. MCINTYRE, The Glen, Innerleithen, 3rd.

FRUIT.

Grapes were largely represented and in first-rate condition, Muscats being particularly fine. In the four-bunch class, Mr. LESLIE, Pitcaulden, Perth, was easily 1st with perfect clusters; Black Alicante and Diamond Jubilee were particularly fine. Mr. WANN, gr. to Lord BALFOUR OF BURLEIGH, Kennet Alloa, 2nd; and Mr. KIDD, 3rd.

For two bunches Mr. LESLIE was again placed 1st, and Mr. GALLOWAY, Gosford, was a close 2nd.

For two bunches of Muscat of Alexandria, Messrs. LESLIE and GALLOWAY changed places with Mr. HAMILTON, Priorsford, Peebles, 3rd.

The class for Black Alicantes was a specially fine one. Mr. HENDRY, Glen Park, Balerno, won 1st prize, and Mr. H. E. HUGHES, Kings Meadows, Peebles, 2nd prize.

Mr. LESLIE (won 1st prize) and Mr. HUGHES were the only exhibitors of Gros Colmar.

The next class was for Lady Downe's, and was more keenly contested, Mr. G. SCOTT, Seathwood, Dundee, being 1st with remarkably large bunches with berries corresponding in size. Mr. HAMILTON was 2nd.

For any other variety of Grapes, Mr. LESLIE, with beautiful examples of Lady Hunt, secured the 1st prize; and Mr. DAY, Galloway House, was 2nd with the variety Mrs. Pince.

In the class for a collection of fruit in eight varieties (Pines excluded) there were five exhibits, that from Mr. JORDAN, Impney Hall Gardens, Droithwich, Wores-tershire, composed of extra fine Pears, Apples, a Melon, and fair Grapes, obtained 1st prize. Mr. KIDD the 2nd with much superior Grapes; and Mr. BARNES, gr. to the Duke of WESTMINSTER, Eaton Hall, Chester, 3rd.

Apples throughout were specially fine, and were exhibited in great quantities. For eighteen varieties grown in Scotland, Mr. WEBSTER, Gordon Castle, won 1st prize; with Mr. R. SINCLAIR, Congleton, Drem, 2nd; and Mr. DAY, 3rd.

For eighteen varieties (open), Mr. R. GRINDROD, Whitfield, Hereford, was 1st with the finest Apples in the show. Mr. JORDAN, 2nd; and Mr. BARNES, 3rd.

The prize for the best six varieties of Pears grown in Scotland was awarded to Mr. GALLOWAY.

Mr. JORDAN was 1st in all the other classes.

A new class for a collection of hardy fruit, to be decorated or not at the discretion of the exhibitor, proved one of the most attractive and best classes in the show. One long and broad table held the whole exhibits from six entrants, and very pretty it was. To make it quite perfect it ought to be imperative that everyone should add decorations to his fruit, for those that did so provided the most attractive display. The 1st prize was awarded to Mr. BARNES for a collection embracing forty-five dishes of Apples, ten of Pears, and one of Walnuts, and decorated with flowers in vases and green foliage on the table; some of the Apples were very fine. The 2nd prize was awarded to Mr. HARDING, who had Apples almost exclusively.

VEGETABLES.

were characterised by very high quality. Much excitement was current in respect to the class for ten distinct

kinds, Mr. REID, Dollarfields, Dollar, being 1st, and Mr. EDWIN BECKETT, Aldenham, Elstree, 2nd; with Mr. HARPER, Tullieholton House, Perth, 3rd. The premier collection was not of such high finish as the 2nd, in which the Beet-root was light coloured in the flesh (a kind that Scottish judges do not like), and the Onions, beautiful specimens, were spoilt by one of the number exhibiting a weak spot.

The class for a collection of six varieties brought out seven competitors, Mr. D. McMICHAEL, Hillfoot, Dollar, winning the 1st prize. The classes for single dishes contained many grand vegetables, e.g., in Leeks the eight from Mr. PITT, Eccles, were blanched quite 2 feet up. Onions too were large, but a little rough, but Carrots, Turnips and Parsnips were perfect. Celery and others kinds were equally well represented.

MISCELLANEOUS EXHIBITS,

as already stated, were not numerous. The grandest of these came from Mr. H. J. JONES, Lewisham, who had a beautifully arranged table of Chrysanthemums (Gold Medal). Messrs. WELLS & Co., Earlswood, Surrey, contributed a display of very fine blooms (Silver Medal). Another good lot of Chrysanthemums was staged by Mr. W. J. GODFREY, Exmouth, Devonshire (Silver Medal). Messrs. J. GRIEVE & SONS, Pillrig, showed decorative plants (Bronze Medal).

FRUIT was shown well by Messrs. THOMSON & SON, Clovenfords, market Grape Gros Colmar predominating (Silver Medal). Mr. HUGH DICKSON, Belfast, secured a like award for a large collection of well-coloured Apples; and Messrs. DRUMMOND & SONS, Ltd., Stirling, also for Apples. Messrs. DAVIE & Co., Haddington, set up a large collection of field Potatoes, including the newer sorts; also Mr. T. A. SCARLETT, Musselburgh. Each of the above received a Silver Medal. Mr. THOMSON showed Lord Rosebery's new Potatoes, and Mr. JONES a table containing dishes of almost all the novelties. Silver Medals were also awarded to Messrs. W. CUTBUSH & SONS, Barnet, for cut Carnations in variety; to Messrs. J. DICKSONS & SONS, for Conifers; and a Bronze Medal to Messrs. DICKSONS & Co., for Primulas and single Chrysanthemum "Ruby."

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.

CHRYSANTHEMUM EXHIBITION.

NOVEMBER 17, 18, 19.—The gardens at Old Trafford presented a very gay appearance on the occasion of the annual Chrysanthemum show. The exhibition-house was devoted to cut blooms, while in the grand avenue were staged the competitive plants, these being especially fine. The Council of the Society themselves made a good display in this latter building, filling the sloping banks with plants in full bloom and tastefully arranged.

There were a good number of exhibits not for competition, principally from local firms, notably from Messrs. DICKSON, BROWN & TAIT, who staged a fine collection of Apples and Pears, for which a Gold Medal was awarded; from Messrs. CLIBRAN, Altrincham, who staged a collection of Crotons, Dracenas, single Chrysanthemums, and cut zonal Pelargoniums, for which they were awarded a Silver-gilt Medal.

Mr. H. D. GOULDEN, Moberley, made a very fine display principally of cut single varieties of Chrysanthemums arranged in vases and bamboo stands (Gold Medal).

Messrs. CALDWELL, Knutsford, staged a collection of stove and greenhouse plants, in addition to a good show of Apples (Silver Medal).

Mr. J. ROUSON, Altrincham, was awarded a Silver Medal for 100 dishes of Apples.

Mr. J. DERBYSHIRE exhibited floral designs.

A collection of shrubs was contributed by Messrs. JOHN WATERER & SONS, Bagshot, which included some fine specimen standard Hollies (Gold Medal).

Mr. W. H. LONG, Monkstown, Co. Dublin, deserves mention in connection with a new patent plant stake very suitable for Chrysanthemums, and which should prove useful to gardeners.

COMPETITIVE CLASSES.

In the class for twenty-four incurved Chrysanthemum flowers, distinct, J. B. HANKEY, Esq., Fetcham Park, Leatherhead, was 1st; followed by W. A. H. BASS, Esq., 2nd; and ARTHUR JAMES, Esq., 3rd.

In the class for twelve incurved varieties, distinct, the 1st place was secured by E. ELIUS, Esq.; with A. H. BASS, Esq., 2nd; and ARTHUR JAMES, Esq., 3rd.

The best collection of thirty-six Japanese Chrysanthemum blooms, not fewer than eighteen distinct varieties, and not more than two flowers of any one variety, was shown by Mr. P. S. VALLIS, Bromham Fruit Farm; ARTHUR JAMES, Esq., was 2nd; and the Dowager Lady HINDLIP, 3rd.

For eighteen similar flowers, the 1st and 2nd prizes went to the same exhibitors as in the preceding class, with JAMES WHITEHEAD, Esq., 3rd.

Mrs. HAYWOOD had the best collection of thirty miscellaneous cut flowers of Chrysanthemums, to in-

clude not fewer than six incurved, six Japanese, and six reflexed varieties, not more than two blooms of any one variety. In this class, the 2nd prize was awarded to WILLIAMS WOOLLAWS, Esq.

The Manchester Challenge Cup was presented by the Right Hon. the Earl of Derby, K.G., for forty-eight flowers of Chrysanthemums, to include twenty-four Japanese and twenty-four incurved varieties, distinct. The competition was open to all comers, with the exception of nurserymen. The judges' decision resulted in J. B. HANKEY, Esq., being awarded the Cup; with P. RALLI, Esq., 2nd; F. H. GOSSAGE, Esq., 3rd; and Mrs. HATWOOD, 4th.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 18, 19.—The annual exhibition of the Aberdeen Chrysanthemum Society was held in the Music Hall Buildings, Aberdeen, on the above dates, and was from every point of view the most successful yet held in the North of Scotland. The entries were the largest ever seen in Aberdeen, while the quality, size, and freshness of the blooms were excellent. In many instances the exhibits were so uniformly excellent that comparison by points had to be most carefully considered.

GROUPS.

The ballroom of the Music Hall buildings was devoted to the display of the groups of pot plants. The most notable entry was that staged by Mr. JOHN PROCTOR, Devanha House, Aberdeen, whose group won for him the Silver Rose-bowl—the most coveted prize of the Society. Having now won the Rose-bowl three times it becomes Mr. PROCTOR's own property. The varieties shown included Miss Elsie Fulton, Mme. Gustave Henry, Mme. P. Radaelli (fine), Cheltoni, Dorothy Pywell, Ernest Bettisworth, F. S. Vallis, Guy Hamilton, Lord Alverstone, Lord Ludlow, Mafeking Hero, Miss Evelyn Douglas, Miss Lucy Evans, Mr. P. S. Vallis, Mrs. Geo. Mileham, Nellie Pockett, N.C.S. Jubilee, and W. R. Church. The winner of the 2nd prize was Mr. JOHN A. GRIGOR, gr. Ranchory House, Aberdeen, whose entry was also much admired.

Among other prize-winners in the section for pot plants were Mr. ARCHIBALD, Dunalastair, Aberdeen, who made exceptionally fine exhibits in many of the classes; Mr. JOHN MCKAY, Howburn, Aberdeen; Mr. A. PATTERSON, Balmadie House; and Mr. F. MUNRO, Stonewood House, the last-named scoring with a fine specimen of Nellie Pockett as the best Chrysanthemum in the show.

CUT FLOWERS.

The beautifully decorated Music Hall showed off to fine effect the various blooms shown in this section.

For twelve vases of Japanese Chrysanthemums in twelve varieties, three blooms of each variety, Mr. WILLIAM PATTERSON, Balmadie House, Aberdeenshire, carried off the premier honour—the President's handsome Silver Challenge Cup. There were four entries for the trophy. Mr. A. HUTTON, Usan House, Montrose; and Mr. J. PRIE, Strichen, Aberdeenshire, filled the 2nd and 3rd places respectively.

There was a large number of classes in the cut flower section, the leading winners, other than those already mentioned, including Mr. EDWARD JOSS, Montrose; Mr. FRANK FRASER, Tillyry, Aberdeenshire; Mr. J. JENKINS, Clifton Road, Aberdeen (an amateur who deserves much praise); Mr. GEORGE JAMIESON; and Mr. ALEX. GRIGOR, Fairfield, Aberdeen.

The florists and nurserymen made a noteworthy display in this section.

FRUIT AND VEGETABLES.

The display of fruit was exceedingly fine, and reflected the greatest credit on all concerned. Mr. Charles Webster, gr. to the Duke of Richmond and Gordon, Gordon Castle, fully maintained his reputation, his exhibits of Apples and Pears being much admired.

Vegetables.—In this section the entries in the various classes were also exceptionally good. Mr. EDWARD JOSS was 1st for the best collection of six varieties.

Non-competitive exhibits were staged by Messrs. William Smith & Son, Aberdeen; Messrs. Ben Reid & Co., Aberdeen; Mr. Alex. Burns, jun., Aberdeen; Mr. H. J. Jones, Lewisham, London; Mr. W. Wells, Redhill, Surrey; Messrs. Curry & Co., London; and Messrs. R. Young & Co., Glasgow.

Messrs. T. RIVERS & SONS, Sawbridgeworth, Herts, sent forward one of the finest displays of fruit ever seen in Aberdeen.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 21.—A meeting of the Floral Committee was held on the above date in the Essex Hall, Essex Street, Strand. First-class Certificates were awarded to two novelties, one a Japanese, and the other an incurved flower. Another variety was presented, for which it was thought, on reference to the Society's minutes, that a Certificate had been awarded at the Crystal Palace on the 2nd inst. This was an incurved

variety named Hilda George, and was raised by Mr. W. Seward, nurseryman, Hanwell. The flower is coloured with light blush-rose over a white ground, and has commendable form. This fact but emphasises the desirability of grouping those flowers which are presented for Certificates at the Society's shows, and keeping them together, thus giving persons interested an opportunity of inspecting them, as they are the most important of the exhibits. The Committee expressed a desire to see four varieties again.

AWARDS.

Chrysanthemum Doris Ruynor.—This is an "incurved" flower, and was claimed to be a sport from the well-known variety Talene. It has a suspicion of bronze shaded with a very light-rose colour. The flowers have rather coarser petals than those of its progenitor.

C. Mrs. T. Dalton.—A large-flowered Japanese variety of bright claret-crimson colour; one of the best coloured flowers of recent introduction. In shape and appearance it resembles Mr. F. S. Vallis—in fact, it may be likened to a crimson type of that variety. From Mr. N. MOLYNEUX, Rookesbury Park Gardens, Fareham.

ANNUAL DINNER.

NOVEMBER 23. The annual dinner of the members and friends of the National Chrysanthemum Society took place on Wednesday evening last, at the Holborn Restaurant. The President of the Society, Chas. E. Shea, Esq., presided over an attendance of more than 100 ladies and gentlemen.

The scene in the Venetian Chamber was a gay one, for the tables were very freely decorated with well-grown examples of the Chrysanthemum, with additions of forced flowers of various other species. After the Royal toasts had been received with musical honours, that of the National Chrysanthemum Society was proposed by Mr. BUNN, who, being unconnected with the Society and a non-grower of Chrysanthemums, expressed the pleasure that he had experienced at meetings and shows held under the Society's auspices, including visits to the Paris shows in company with the deputations from this country. The President replied to this toast, and said that the National Chrysanthemum Society continued to flourish. He was unable to state the exact financial details, but they were satisfactory. Indeed the only cloud under which they had met that evening was the absence of the General Secretary, Mr. Richard Dean, who was on a bed of sickness. They all hoped that Mr. Dean would soon be able to be amongst them again. The recent exhibition at the Crystal Palace was one of the most successful the Society had ever held. But although they were prosperous, he thought that no one present that evening would be satisfied unless the Society was making progress. Mr. Shea therefore impressed his hearers with the importance of moving forward upon a well-considered plan. He referred to a criticism that had been written recently by Mr. Ed. Molyneux, in the *Gardeners' Magazine*, the chief point of which was an insistence that the decorative character of Chrysanthemums should dominate over everything else. Mr. Shea thought there was something to be said for this view, and they must remember that the large Japanese and incurved flowers, though so beautiful and so useful for exhibitions, were not those which were commonly used for decorative purposes. Various criticisms had been levelled at the Society, and all sorts of things had been said about the exhibition boards or boxes. Well, perhaps it was not the best method of displaying the flowers, and they certainly had better effect in vases, but it must be remembered that specimen flowers with long stems could not be taken about the country conveniently and cheaply. For this reason and others the show boards were still used and would always be used, as well as vases. The President said that probably most of those present had seen a photograph of an exhibition of Chrysanthemums in Shanghai in the *Gardeners' Chronicle*. Well, he thought they had little to learn from the plants shown there, which appeared as if they had been mown over with a scythe. They were illustrations of high culture no doubt, but they were not of a type to be recommended.

Mr. GEORGE GORDON proposed the toast of "The President, Vice-Presidents, Treasurer, Secretaries, and Committees of the Society." He said the Society had for its President a gentleman who had distinguished himself in horticulture, the Vice-Presidents had all done good service for the Society, the Treasurer and Committee were likewise zealous in their work, and the general Secretary, Mr. Dean, whose absence Mr. Gordon regretted with the President, had done his work so well that it would be difficult to find a successor when it should become necessary to do so. In responding to this toast, Mr. THOS. BEVAN, Chairman of the Executive Committee, drew the attention of the company to the exhibition of Market Chrysanthemums to be held in the Essex Hall, Essex Street, Strand, on December 14, an event which has been announced in these pages.

The toast of "The Affiliated Societies" was proposed by Mr. C. HARMAN PAYNE, who said there were

now 117 affiliated societies, and responded to by Alderman BISHOP, J.P., a member of the West Ham Society. The toast of "The Chairman" was subsequently proposed by Mr. J. H. WITTY; that of "The Ladies and Visitors," by Mr. J. T. SIMPSON; and that of "The Press," by Mr. A. TAYLOR; the response to the last toast being made by Mr. C. H. CURTIS.

During the evening, the Holmes Memorial Cups, Trophies, &c., won at the recent exhibition, and a Special Prize of 12 guineas given by the Crystal Palace Company; also a special prize given by the Ichthemio Guano Company, were presented to the winners. The proceedings were enlivened by vocal and instrumental music, and were terminated shortly after 10 o'clock.

BRIEF REPORTS OF CHRYSANTHEMUM SHOWS.

REIGATE CHRYSANTHEMUM.—What is admitted to have been the most successful show in connection with the Reigate and District Chrysanthemum Society took place on November 11, in the Public Hall, Reigate. This was the sixteenth exhibition in connection with the Society, and the Gardeners' Royal Benevolent Institution has benefited by a present of 300 guineas, and £155 has been forwarded to the Gardeners' Royal Orphan Fund during the sixteen years. The various exhibits were arranged to the best advantage, the groups being especially attractive, while the cut flowers were greatly admired by all. The Cottagers' classes, although not very extensive, were of first-class quality, and there was a great improvement upon previous years. The Surrey Seed Company had on exhibition a large collection of Apples of well-known varieties. In the class that called for a group of Chrysanthemums, 30 feet in diameter, Mr. W. Pottle, gr. to W. Marshall, Esq., was 1st; with Mr. Mead, gr. to M. Marcus, Esq., High Trees, 2nd. Mr. Phillips, gr. to Colonel Inglis, was 1st for a group of Pompon varieties. For the 50-foot group of Chrysanthemums Mr. F. Phillips was awarded 1st prize; being followed by Mr. Seaman, gr. to G. Taylor, Esq., 2nd; and by Mr. Comber, gr. to W. Freshfield, Esq., 3rd. For a group of miscellaneous plants, Mr. H. Burdett, gr. to E. C. P. Hull, Esq., was placed 1st, with Mr. W. Teaman, 2nd. In the class for thirty-six Japanese Chrysanthemum flowers, Mr. C. J. Salter, gr. to Mrs. Hayward, was 1st; followed by Mr. Phillips, 2nd; and by Mr. C. Burton, gr. to H. C. Benson, Esq., 3rd. Mr. Salter took premier honours for twenty-four incurveds; Mr. Mead winning in the class for twelve of this type. The best vase of Chrysanthemums was staged by Mr. T. Sparks, gr. to W. T. Grant, Esq.

BANBURY CHRYSANTHEMUM.—The Countess of Jersey opened the annual Chrysanthemum show at Banbury on Wednesday, in the presence of a large assembly. The show was of all round excellence. The Banbury Challenge Cup, value 25 guineas, for twelve vases in twelve varieties, was won by Mr. F. J. Meyers, of Charlton House, and in the opinion of the judges they were the finest blooms they had seen; the 2nd in point of excellence being shown by Mr. W. C. Cartwright, of Aynho Park; and the 3rd by Mr. A. K. Motion, of Upton House. The Mayor's Challenge Cup for a dessert table decorated with fruit and flowers was won by the Marquis of Northampton, Castle Ashby, and it was a very close competition between this and the display from Mr. W. C. Cartwright, who won the Cup last year. The cut blooms were above the average quality, and the fruit classes were exceptionally well filled, whilst the vegetables were a record. Certificates of the National Society were awarded to the winners of the two Challenge Cups.

A3ERYSTWYTH CHRYSANTHEMUM.—The seventh annual show was held in the Royal Pier Pavilion on Wednesday, November 9. The show was considered one of the best ever held. For a group of Chrysanthemums occupying a space of 10 feet by 6 feet and for which the Tradesmen's Cup was given as a prize, Sir Pryse Pryse (gr. Mr. Rob Winstanly) was awarded 1st prize. For twenty-four cut Chrysanthemum blooms, to include twelve Japanese and twelve incurved varieties, distinct, a solid Silver Cup, valued at £5, and a monetary prize of £5 was offered. To become possessor of the Cup it has to be won three times, but not necessarily in succession. Sir Pryse Pryse (gr. Mr. Rob Winstanly), having now won it three times in succession, becomes the owner. The 2nd prize, £3 and a Silver Medal, was won by the Countess of Lisburne. In the class for twenty-four cut Chrysanthemum flowers, to include twelve Japanese and twelve incurved varieties in not fewer than eighteen distinct varieties, the 1st prize of £1 and a Cup valued £3 was given by Messrs. Dewar & Son, and he won twice but not necessarily in succession. The winner this year of this prize was W. H. Palmer, Esq. (gr. Mr. R. C. Williams). The local non-competitive entries included a fine group of Chrysanthemums, put up by the Corporation's gardener, Mr. R. Weller, who also won the Certificate for the best Chrysanthemum plant in the show.

BURTON CHRYSANTHEMUM.—On the occasion of the nineteenth annual show of this Society, held on Saturday, November 12, all previous displays, both as regards the quality and quantity of the blooms staged, were surpassed. The committee this year added several new classes. There were no fewer than 120 exhibits—nearly double those of last year. The whole of one side of the building was taken up by collections, of which there were five, all arranged in semi-circular form, and consisting of standard varieties. The 1st and 2nd prizes in this class were given by Lord Burton, the President of the show. The remaining classes were devoted to cut blooms, these being placed on two tables down the middle of the hall and alongside the wall. The outstanding feature here was undoubtedly the Japanese blooms, including splendid specimens of the renowned P. S. Vallis. The vase collections were also excellent, these being made more effective in some

of the classes by the addition of foliage. **Groups.**—In the class which called for a group of Chrysanthemums, Mr. E. J. Upton was an easy 1st, thus repeating his performance of last year. There was a close contest for 2nd and 3rd prizes, which eventually resulted in Mr. Watson taking 2nd, with Mr. E. J. Simkins, 3rd. Five members competed. For twenty-four Japanese flowers, Mr. R. Nisbet, gr. to W. Bass, Esq., was 1st. 2nd, Mr. G. Wadison, gr. to F. A. Brace, Esq., Doveridge. 3rd, Mr. H. Sutton, gr. to the Mayor of Burton. Mr. Nisbet was also 1st for the best collection of incurved Chrysanthemums.

CANTERBURY CHRYSANTHEMUM SHOW.—The Canterbury Gardeners' Society held what their President termed "their annual field day," on November 15. The standard of excellence was fully maintained, and the fruit was declared by the judges to be the best they had seen at the annual show for eight years. The specimens in the open class were very fine, and one of the features of the show was undoubtedly the table centre decorations by the ladies. The vegetable exhibits compared well with those of any former year. This year Mr. D. Fairweather, F.R.H.S., won the Challenge Cup (presented by members of the Canterbury Corporation) for the third time in succession, and it now becomes his absolute property.

CLACTON HORTICULTURAL.—The large central hall at the Winter Gardens proved an ideal place for an exhibition of this kind, and this year the exhibits overflowed into one of the side halls. There were eighty more entries this year than last, and the quality of the exhibits was decidedly superior. The display of Chrysanthemums was one of the best we have seen at this show. The groups in the open class were very fine. First honours and the handsome Silver Cup presented by Mr. Councillor D. S. Whitecher, went to Mr. H. Grant (gr. Mr. F. J. Toms), with a collection that contained many large and beautiful blooms.

GARDENERS' DEBATING SOCIETIES.

ABINGER AND DISTRICT GARDENERS.—On Thursday, November 10, Mr. F. W. E. Shrivell lectured before a large gathering of gardeners and other persons. The Vice-President, F. Merillies, Esq., occupied the chair. Mr. Shrivell, after an introduction by the Chairman, delivered a lecture entitled "Up-to-date Manuring," the lecture being supplemented by lantern views of the experimental grounds at Golden Green, Tonbridge, Kent. Mr. Shrivell, who cultivates a large area of Hops, showed some interesting snapshots of the people from the East-end of London under all sorts of conditions during Hop-picking time. Mr. Shrivell claimed that the practice of up-to-date manuring was a most profitable one to follow, both as a medium for reducing expenditure and at the same time for increasing the yield of crops. Potatoes manured with 50 loads of ordinary London dung per acre gave an average crop of 9 tons per acre, the cost of the manure being £10 per acre. On another plot, 25 loads of London dung, 10 cwt. of basic slag, 1 cwt. sulphate of potash, and 4 cwt. nitrate of soda, gave an average result of 12 tons of produce per acre, the cost of the manures in this case being only £8 15s. per acre. *H. S.*

EGHAM AND DISTRICT GARDENERS.—"Chrysanthemums" was the title of a paper read by Mr. T. Stevenson, of Woburn Place, Addlestone, on the 16th inst., to a large gathering; Mr. A. Sturt presided. Mr. Stevenson, who is well known as a local exhibitor, dwelt on the various methods of propagation, time and selection of cuttings for show and decorative purposes, the various composts and manures used, the different buds and time of selection, the many diseases and insect pests, and remedial measures he had found beneficial for their extermination. The lecturer considered a remedy has yet to be found for the prevailing rust disease to which the Chrysanthemum was so subject. Mr. Stevenson found that sulphide of potassium for dipping the plants, and soot-water for spraying at all times, were great preventives in checking this malady.

DEVON AND EXETER GARDENERS.—At the meeting held on November 16, Mr. Betts read a paper on "Narcissi," dealing with the widely extended habitat of the genus, its general usefulness, and the beauty of the genus as a whole. He gave a description of the best methods of cultivation, advising early planting as a great help towards success. Mr. Betts mentioned several of the more useful varieties, those which were easily grown and most showy, also those varieties that could be purchased at a reasonable price. In the competition for the best vase of Chrysanthemums, for which there were eight entries, Mr. John Baker, gr. to Mr. Bradley Rowe, Exeter, was 1st. *A. H.*

CROYDON AND DISTRICT HORTICULTURAL.—At the meeting on Tuesday, November 15, a paper was given by Mr. J. Friend, Rooksnest Gardens, Godstone, on "Vegetables for Exhibition or Yearly Supply." Commencing with January, he reviewed the necessary work for each month, paying due attention to the cultivation of the soil, which plays an all-important part. Mr. M. E. Mills, Coombe House Gardens, staged half a dozen each of Japanese and incurved Chrysanthemums, Physalis Franchetti, and fruits of Pyrus japonica.

CRAWLEY AND DISTRICT GARDENERS.—At the meeting on Wednesday, November 9, Mr. E. Neal gave a very interesting address on "Hardy Fruits." Referring to heavy, clayey soils, the lecturer recommended deep trenching, and incorporating quantities of leaf-mould, freshly collected leaves, lime, or other suitable material. He also recommended obtaining good trees, on the right "stocks." He found that some varieties fruit much more freely on the Paradise than on the "Crab" stock, hence for that reason shy-fruited varieties

should be on the "Paradise," unless intended as Standards, in which case the Crab stock would be found better, as roots from the latter stock strike deeper into the subsoil and so help to resist the action of fierce winds. The lecturer touched upon root-pruning, which is the best method of checking strong growth in trees; he also spoke of the different methods of pruning. The speaker gave some capital recipes for combatting insect pests. Pears, Plums, and Cherries were all dealt with in this very instructive paper.

READING AND DISTRICT GARDENERS.—The last meeting of the above Association was devoted to the reading of the 1st prize essays in the senior and junior divisions in the recent competition on Carnations. The two successful competitors were Mr. W. Thruham, of Culham Court Gardens, Henley-on-Thames, and Mr. H. Wynn, The Gardens, Cressingham, Reading. After the essays had been read, a discussion took place, sustained by the Chairman, Messrs. Powell, Tunbridge, Ellis, Townsend, Chambers, Dore, Judd, Hinton, and Winsor. There were two exhibits both remarkable for the time of year, viz., twelve splendid fruits of a seedling Melon, by Mr. W. Barnes, The Gardens, Bearwood; and some beautiful blooms of Cactus and Pompon Dahlias cut from the open, by Mr. T. J. Powell, The Gardens, Park Place, Henley-on-Thames.

KINGSTON GARDENERS.—At a recent meeting of the Society that well-known vegetable grower, Mr. Jas. Gibson, gave a paper on "Vegetables," illustrating his remarks with lantern slides supplied by Messrs. Sutton & Sons, of Reading. Many of the views represented prize collections of vegetables exhibited by Mr. Gibson. Other pictures showed examples of separate varieties of all the principal kinds of vegetables which the lecturer considered to be of the best quality. Mr. Gibson dealt with his subject from the point of view of the ordinary grower, and also of the exhibitor. Soils, manures and full cultural details were given for all the more popular vegetables. *J. T. B.*

A few weeks since Mr. W. Hayward, the well-known florist of Fife Road, gave the members of this Society the benefit of a demonstration in wreath-making. That object-lesson was so greatly appreciated that Mr. Hayward consented to give a further one on bouquet making. That took place on the evening of the 18th inst. Mr. A. H. Jenkins being in the chair. The demonstration included the making up from the mossing of the base or pad to the complete finish fit for any purpose. Of three bouquets, one of yellow Chrysanthemums, one of pink Madame Franco Carnations, and a costly one of chiefly Liliun lancifolium album flowers, Lilies of the Valley, Roman Hyacinths, and Tuberoses, with a few Cattleya labiata flowers. Each bouquet had Smilax or Asparagus trails. The operations were watched with the keenest interest by the members, as such a demonstration was an altogether unusual one.

THE DANGER OF TINNED VEGETABLES.—The dangerous and fatal results that are sometimes consequent upon the use of tinned vegetables are well known. Late last year ten pupils of a cookery school near Darmstadt and their teacher were fatally poisoned by eating preserved Beans. This and other similar accidents have attracted the attention of analysts to the subject, and some of the results obtained by their researches are epitomised by M. Émile Wagner, of Strasbourg, in a recent number of the *Journal de la Société nationale d'Horticulture de France*. According to him the authorities soon discovered that the poisoning was by no means due to the metals of which the tins were made and with which they were soldered, but to a bacillus similar to that infecting salted meats. There is no evidence of the presence of this bacillus on fresh fruits and vegetables, but in time their appearance when badly preserved alters greatly and they smell rotten. As this bacillus can exist without air it develops and multiplies unchecked in tins, whether these are or are not hermetically sealed. It is even suggested, though it appears to be unlikely, that certain bacilli can resist boiling water for two hours. The tainted preserves get soft and give off offensive gases that cause the tins to bulge. These bent tins are well known to manufacturers, and consumers should beware of purchasing them. To avoid goods becoming thus damaged it is essential to choose good and suitable jars and jampots for preserving. It is not enough to rinse these out with cold or tepid water; boiling water should be used. The fruit and vegetables chosen must be fresh and free from spots of decay. This is most important, and every withered or rotten portion must be cut away. Fruit and vegetables should for additional security be thoroughly well boiled before being sent to table.

MARKETS.

COVENT GARDEN, November 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Ferns in var., per doz.	3	0-12
Arbor Vitæ, per doz.	9	0-18	Ficus elastica, per doz.	9	0-24
Aspidistra, per doz.	18	0-36	Lycopodiums, per doz.	3	0-4
Aucubas, per doz.	4	0-8	Marguerites, per doz.	6	0-10
Azalea mollis, pot, each	5	0	Palms, variety each	3	0-20
Begonia Gloire de Lorraine, pr. dz.	9	0	Pelargoniums, scarlet, per doz.	4	0-6
Bouvardias, pots, per doz.	4	0	Poinsettias, doz.	10	0
Chrysanthemums, per dozen	4	0-18	Primulas	4	0-5
Cocos	12	0-18	Pteris tremula, p. doz.	4	0-6
Crotons, per doz.	12	0-24	Roman Hyacinths, per box	3	0
Cyclamen	10	0-12	Solanums, per dozen	4	0-6
Cyperus, per doz.	3	0-4	Spiræas	10	0-12
Dracenas, variety, dozen	6	0-18	Tea-plant, per dozen	3	0-4
Ericas, per dozen	12	0-18			
Eunymus, vars., per dozen	4	0-10			

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Anemones, per dozen	2	0-4	Marguerites, white, dozen bunches	2	0-6
Azalea mollis, per bunch	1	6	Mimosa (Acacia), packet	1	6
Bouvardias, per dozen	4	0-6	Narcissus, p. doz.	2	0-3
Callas, per doz.	4	0-6	Soleil d'Or, per dozen	4	0-5
Carnations, doz. bunches	9	0-60	Orchids, various, per dozen	2	0-8
Chrysanthemum, per dozen	4	0-24	Cattleyas	6	0-12
Croton Leaves	1	6-2	Paneratiums, doz.	2	6
Eucharis, doz.	1	6-2	Pelargoniums, zonal, dozen bunches	3	0-6
Ferns, Asparagus, per bunch	0	6-16	white, dozen bunches	3	0-6
French, doz. bunches	0	3-4	double-scarlet, per doz. bun.	3	0-6
Maidenhair, doz. bunches	4	0-6	Poinsettias, per doz. bunches	9	0
Foliage, various, dozen bunches	2	0-6	Roman Hyacinths	6	0-12
Gardenias, per box	2	0-3	Roses, Mermet, per bunch	2	0-5
Honesty, bunch	2	0	white, bunch	1	0-2
Lilac, French	2	0-4	pink, bunch	4	0-5
Lilium auratum, per bunch	2	0-3	Safran, bun.	1	0-16
Harrisii, per bunch	3	6-5	Sunrise, bun.	1	0-16
lanefolium	1	0-26	Smilax, 12 bunch.	1	6-3
Lily of the Valley	6	0-12	Stephanotis	1	0-2
Marguerites, yellow, 12 bunches	0	9-16	Tuberose on stem, bunch	0	9-1
			short, p. doz.	0	2-4
			Violets, doz. bun.	1	0-2
			Parma, bun.	1	6-2

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen	2	0-3	Mushrooms(house), per lb.	1	0-13
Jerusalem, sieve	1	0	Onions, pickling, per sieve	3	0-4
Beans, dwf., p. lb.	0	9-1	per bag	7	6-8
Beetroot, bushel	1	0-16	per case	8	0-86
Brussels-Sprouts, sieve	0	6-13	Parsley, per doz. bunches	1	0-16
Cabbages, fally	2	0-3	sieve	0	6-9
Carrots, per doz. bunches	1	6-2	Parsnips, per bag	2	6
bag	2	0-3	Potatoes, per ton	60	0-100
Cauliflowers, per dozen	0	9-16	Radishes, per dozen bunches	0	9-1
Celeriac, per doz.	1	6	Rhubarb, York, per dozen	3	0
Celery, 12 bunch.	6	0-10	Salad, small, punnets, per doz.	0	9
Cress, doz. pun.	0	9	Seakale, per doz.	1	6
Cucumbers, doz.	4	0-10	shallots, p. sieve	3	0
Endive, per doz.	1	0	Spinach, p. bush.	1	0-16
Garlic, per lb.	0	3	Tomatoes, Tene-riffe, boxes	12	0-16
Horseradish, foreign, p. bunch	1	0-12	English	3	6
Leeks, 12 bunches	1	0-16	Turnips, doz.	1	0-16
Lettuces, Cabbage, per dozen	0	9-1	bag	1	6-2
Cos, per doz.	1	0	Watercress, per dozen bunches	4	0
Mint, per dozen	3	0-4			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per bushel	1	6-36	Grapes, Muscat, A, per lb.	2	0-36
English, sieve or half bushel	13	6-0	B, per lb.	1	0-16
Bananas, bunch	6	0-10	Canon Hall, A, per lb.	3	0-40
loose, dozen	1	0-16	B, per lb.	1	6-26
Chestnuts, per bag	6	6-14	Alicante, per lb.	0	6-10
Cobnuts, per lb.	0	4-0-4	Lemons, per case	7	0-18
Grapes, Gros Colmar, per lb.	0	6-13	Melons, each	0	4-16
			Oranges, per case	2	0-12
			Pears, per sieve	1	6-20
			Pines, each	2	0-30

REMARKS.—Yorkshire Rhubarb is now obtainable—Grape-fruits, 6s. to 8s. per case; Custard-Apples, dozen, 6s. to 12s.; Jamaica Oranges, 9s. to 12s. per case; Tene-riffe, 2s. 6d. to 3s. ditto; Murcia, 6s. to 7s. ditto; Denia, 14s. to 26s. ditto; Barrel Grapes, 6s. to 11s. per barrel; English Apples: Blenheim, 2s. 6d. to 3s. 6d.; Wellington, 3s. to 6s.; Lord Derby, 3s. 6d.; Golden Noble, 3s. all per bushel. Ribstons, 2s. to 3s. per sieve or half bushel; Cox's, 2s. 6d. to 6s. per sieve; various, 1s. 6d. to 2s. ditto. English Pears, sieve, 1s. 6d. to 2s.; foreign crates, 2s. 6d., 5s., 9s. each; Californian cases, 10s. to 12s. each; Californian Apples, 6s. to 7s. per case; Oregon Newtowns, 11s. to 13s. ditto; Barrels, Canadian, Nova Scotian or United States, prices, per barrel: A, Blenheim, 12s. to 13s.; King of Tompkins County, 12s. to 13s.; Ribstons, 13s. to 15s.; Newtowns, 20s. to 25s.; B, various, 8s. to 10s. Walnuts, bags, 3s. 6d. to 4s. 6d. Celery, washed or otherwise, 8s. to 10s. per dozen. Trade still continues slow.

POTATOES.

Dunbars, 90s. to 100s.; various, home-grown, 60s. to 80s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

The dense fogs have had a depressing effect in checking trade, which is however not quite at a standstill, even in the case of pot-plants, though all complain, there is probably fully as large a trade done now as in any previous season at the same date; the fault lies in there being too much produce in the markets. Formerly, among pot-plants, the Chrysanthemums had the trade much to themselves at this season, now they have to compete with Lilliums, Lilacs, Azalea mollis, Lily of the Valley and other spring subjects, as well as the Marguerites, Heaths, &c. Still Chrysanthemums are grown in larger quantities than ever. I have never seen the market better supplied with these flowers than it has been this season, for the best-finished plants of which the prices have been fairly good, but many remain unsold, while others are cleared out at very low prices. It is much the same with Ericas, of which hyemalis is now coming from several growers, and though prices are low they cannot be cleared. Caffra and gracilis are also over plentiful. Cyclamens seem to be cleared out better, but they have to be sold at comparatively low prices; several growers are now sending well-flowered plants. Begonia Gloire de Lorraine is also plentifully arriving, and some excellent plants are seen. The Turnford Hall variety is also very fine, and this is now sold at the same price as the older variety. Lily of the Valley in pots is excellent; it is also sold in boxes. Good Lilliums in pots are still seen; also Spiræas and Azalea mollis. All kinds of Ferns, Palms, and other foliage plants continue over plentiful. Although there may be a prospect of rather better trade, with the large supplies prices are not likely to advance much.

CUT FLOWERS.

There is little that is fresh to record in the cut flower trade. The outdoor Chrysanthemums still glut the market and keep down the prices of better quality blooms. The display of good flowers of medium size is now quite attractive—certainly much more effective than the immense blooms seen at shows. Framfield Pink (Madame Felix Perrin) is very good, Western King (the American variety) is one of the best "whites." Niveum is still grown extensively. Major Bonaparte, an incurved "yellow," is good. Several incurved varieties are favoured by market-growers. The blooms are not such as are seen at exhibitions, but of moderate size, and petals looser. William Holmes and W. Shrimpton appear to be the best "crimson." Sarah Owen (bronzey-brown) is very good. Orchid bloom is now over plentiful, Cattleyas especially so; Odontoglossum is, perhaps, rather scarce. Cypridiums in several varieties are very good; I find these are much used for various kinds of florists' work, even in wreaths and other designs. Flowers from retarded stock are very abundant; the white Lilac appears to have more substance than that forced in the ordinary way. Lilliums, Lily of the Valley, and Azalea mollis are as plentiful as in spring. Poinsettias are very bright, lasting well while the weather continues mild; no other flower has the same colour effect. Roses in all colours are good, and there are still some from outside. Carnations are unusually plentiful for this time of year; in fact, there is a good supply of all that could be desired.

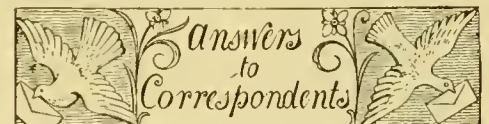
FRUITS AND VEGETABLES.

GLASGOW, November 23.—The following are the averages of the prices during the past week:—Apples, American, 10s. to 18s. per barrel; do., Canadian, 10s. to 22s. do.; do., English, 6s. to 15s. per cwt.; common, 4s. to 5s. per ton; Lemons, 8s. to 15s. per case; Grapes, Almeria, 6s. to 15s. per barrel; do., home 9d. to 1s. per lb.; Alicante, 6d. to 1s. do.; Colmar, 8d. to 1s. 6d. do.; Muscats, 1s. 6d. to 3s. do.; Bananas, 6s. to 12s. per bunch; Mushrooms, 1s. 6d. per lb.; Tomatoes, 4d. to 10d. per lb.; Onions, Valencia, 7s. to 8s. per case.

LIVERPOOL, November 23.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatoes, per cwt., Main Crop, 2s. 9d. to 4s.; Up-to-Date, 1s. 10d. to 2s. 2d.; British Queen, 1s. 10d. to 2s. 2d.; Conquest, 1s. 10d. to 2s.; Turnips, 5d. to 7d. per dozen bunches; Swedes, 1s. to 1s. 3d. per cwt.; Carrots, 6d. to 8d. per dozen bunches, and 2s. 6d. to 3s. per cwt.; Onions, foreign, 6s. 9d. to 7s. per bag; Parsley, 4d. to 6d. per dozen bunches; Cauliflowers, 1s. 6d. to 2s. do.; Cabbages, 6d. to 1s. do.; Celery, 8d. to 1s. 4d. do. Fruit: Apples, American, 7s. 9d. to 9s. 6d. per barrel, and 12s. to 14s. 6d.; Canadians, 8s. 6d. to 12s., do., and 15s. for superior lots do.; Pears, American, 2s. 9d. to 4s. 6d. per box, and 12s. to 15s. 6d. per barrel; Grapes, Almeria, 5s. to 9s. per barrel; Oranges, Valencia, 9s. to 11s. 6d. per case; Malagas, 6s. to 9s. 6d.; Lemons Messina, 4s. to 1s. 8d. per case; Malagas, 5s. 3d. to 7s. 3d. St. Johns.—Potatoes 10d. to 1s. per peck; Cucumbers, 3d. and 6d. each; Filberts, 8d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. do.; do., foreign, 6d. to 8d. do.; Pineapples, foreign, 3s. to 5s. each; Mushrooms, 10d. to 1s. per lb. Birkenhead:—Potatoes, 6d. to 8d. per peck; Filberts, 6d. to 8d. per lb.; Grapes, English, 1s. to 2s. do.; do., foreign, 3d. to 6d. do.; Tomatoes, English, 3d. to 6d. do.; Mushrooms, 1s. do.

ENQUIRY.

SEA-SAND FOR CROQUET GROUNDS, TENNIS COURTS, AND BOWLING GREENS.—Have any readers of the *Gardeners' Chronicle* had practical experience with sea-sand upon such greens? If so, what are the results in the shape of its abolishing Daisies, Plantains, and other troublesome weeds. I was told recently that it was good for the purpose named, but my informant was not in the business, and had only got his information incidentally. It should be applied at about this time, and fully ½ inch thick, and followed up in February with some artificial manure. Ground bone-meal I should say would be the best for the latter purpose. The idea has a sensible ring about it, hence this query. H. J. C.



* EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BEECH: F. W. B. The work of a coccus. We fear you can do nothing if the disease is widely spread; otherwise petroleum emulsion might be tried as a spray, or the bark scrubbed with it where possible.

CHRYSANTHEMUMS: Miss C. Send to some grower who makes a speciality of such plants. We do not recognise it.

BOUGAINVILLEA: J. P. We believe that the species we have usually seen on the walls of dwellings in southern Europe is B. spectabilis, but probably B. glabra is also grown. Neither species would be likely to succeed out-of-doors in Kent, but they might do so under a verandah if protected during frost in winter.

CUCUMBER SPOT: G. H. You have not read your *Gardeners' Chronicle* or you would know how terribly fatal this disease is. Turn out the plants and burn them. We fear no remedy is practical enough for use. Before next season thoroughly cleanse the houses, fumigate with sulphur, and feed the plants well next year with potash manures. Spray the foliage with liver-of-sulphur half an ounce to two gallons of water.

CUCUMBERS: F. C. It is quite true that Cucumbers are occasionally produced without fertilisation of the flowers, but never seeds.

CHAVEY DOWN (UNDER BRACKNELL).—We have received a detached label from the postal authorities bearing the stamp of the Chavey Down post office. Will the sender please write to us or send again, as the parcel may have been lost?

FAILURE OF THE LARCH: *Practical Forester.* The growth of the Larch you refer to as being 40 to 50 feet in height eighteen years after date of planting, is wonderfully good. It would certainly be interesting to have them photographed, and also to obtain particulars of soil, situation, aspect, &c., as well as the freedom or otherwise of the tree from disease (*Peziza Willkommii*). The only objection to the timber of Larch grown at such a rapid rate is its comparative softness and porosity, and it often happens that rapidly grown Larch is more subject to "Larch-rot" or internal decay than slower-grown trees. Particulars as to the condition of those trees already cut as regards this point would be of value, and also a statement respecting the approximate rate of growth at the present time, that any falling off may be noted which might indicate the approach of premature decay.

FLOWERS, VEGETABLES, AND FRUITS IN UGANDA: *Hortus.* It should be borne in mind that the kingdom of Uganda contains a variety of climates, from that obtaining on the vast slopes of snowclad Ruwenzori to that found on the shores of the Victoria Nyanza. But for your purpose we shall take the climate found on the lake shores, as that or one similar obtains over a very wide extent of country inland. To ask what sort of flowers will do here is to be met with the reply, "Most of the best things found outdoors in a British garden in summer time." Let us first see what will not do or are not worth trying. These are Anemones, Aquilegias, Calceolarias, Campanulas, Chrysanthemums (annual or otherwise), Cyclamen, Delphiniums, Poppies, Primulas, Stocks, Sweet Pea, Sweet William, Wallflowers. But then what a range we have in the things which do succeed: Aster (China or bedding), Ageratum, Amaranthus (two good sorts are wild), Antirrhinums (lovely flower for a long period), Begonia, Balsam (spread over the garden like weeds), Browallia, Cannas (the glory of the garden, the best sorts should be taken), Clarkia, Carnation (one gets interesting results from seeds), Cockseoul, Coleus (do splendidly, many charming forms come from a packet of seed), Coreopsis, Cosmos (both quite at home), Cornflower, Dianthus, Dahlia (becomes a weed so freely do they flower, good Cactus sorts should be taken), Eschscholtzia, Gaillardia, zonal Pelargoniums, Gladiolus (there are wild sorts in the country, the garden hybrids are most satisfactory), Pyrethrum, Heliotrope, Helichrysum, Lobelia, Lupinus, Marigold, Mignonette, Nemophila, Nicotiana (especially the fine species *syvestris*), Nasturtium, Nemesia, Pansy (not in all cases a success), Petunias (nothing is more remarkable than the way Petunias and Zinnias have taken to tropical Africa. The Petunia is all over the place in towns in all its glory of fine colouring, such as one never sees at home. We once saw a field one or two acres in extent near Blantyre in British Central Africa which was a blaze of Zinnias. How they all got there was a puzzle, but they had succeeded in ousting the native vegetation and reigned supreme. Zinnias go single in a generation or two, but retain their fine colours), Pinks, Drummond's Phlox, Salpiglossis, Salvia (the red one), Solanum, Sunflower (single miniature, the big double one is common), Tagetes, Verbena, Winter Cherry. Foliage plants: Beet, Iresine, Perilla. Bulbs: Anaryllis, A. Belladonna, Vallota, Tuberose, Montbretia, Hyacinthus candicans; Zephyranthes gloriosa is wild, Agapanthus, all these do exceedingly well. It is the same with vegetables as with flowers, one can have a fine pick of good things. What have proved unsatisfactory are: Runner Beans, Broad Beans, Kale, Broccoli, Savoys. What did well included: Peas (dwarf sorts are recommended, the natives everywhere grow Peas), French Beans (a good form is grown by the natives), Beet, Brussels Sprouts, Cabbages (the dwarf York types with small hard heads), Cau-

liflower, Carrots, Cucumbers, Celery, Gourds (the natives grow several sorts), Kohl Rabi (very useful), Leeks, Lettuce (especially choice Cabbage sorts), Onions, Parsley (a great success), Asparagus, New Zealand Spinach, Artichokes (Globe and Jerusalem, the former must be given a cool site, it seems to dislike the tropical sun); Rhubarb may also be tried in a cool, shady place, roots are best to start with, seeds are slow. Herbs: Borage, Sage, Thyme, Mint. When we come to fruits our list is somewhat limited, at least as regards temperate sorts. Apples, Pears, and Plums will not do. Figs, Peaches, Nectarines, and choice Greengages can be planted, also Raspberries, Strawberries, and Currants. The Vine, for some strange reason, is not at all successful. But practically all the tropical and sub-tropical fruits thrive: Pineapples, Oranges, Lemons, Limes, Mangos, Cashews, Guavas, Soursoops, Avocado-Pears, Tomatos, and Loquat do exceedingly well. Three sorts of Passion Fruit are so common that you will have little difficulty in stocking your garden, they are: *Passiflora edulis* (excellent eating), *P. laurifolia*, and *P. quadrangularis*. The Papaw (*Carica Papaya*) is common in every village, and Bananas are the staple food of the natives. *J. M.*

FRUIT-TREES FOR INDIA: *W. S. M., Bombay.* You do not state for what part of India the information regarding Peaches, Pears, Plums, and Nectarines is required. Generally the select varieties of those fruits that are cultivated in Europe have not a constitution adapted for Indian conditions. Many of the select sorts have been taken to India with the idea of grafting them on native stocks, but the result has been very unsatisfactory. In Northern India, at an altitude of 3,000 to 5,000 ft., a few fair specimens of the fruit of the following have been produced:—Louise Bonne and Marie Louise Pears; Green Gage and Blue Gage Plums; Royal George Peach; and Violette Hâtive Nectarine. Cross-breeding, which is kept secret from Hindus, (who regard such work as worse than sacrilege, is the best means of obtaining suitable varieties of fruits for the Indian climate.—If no other colour has disappeared during the process of drying the Begonia leaf sent is *B. Prince Wallenstein*, one of the older garden forms raised from *B. Rex*.

KINGSTON CHRYSANTHEMUM SHOW: CORRECTION. The 2nd prize in the class for Chrysanthemum groups was awarded, we are informed, to Mr. C. Burfoot, gr. to G. B. Windeler, Esq., Ditton Hill, Surbiton.

LELIA AND OTHER PLANTS: *B. H.* What you describe as a second leaf folded at the edges at the top of the pseudo-bulb is probably the flower-sheath. Wait and see what will develop when the "leaf" has unfolded. The dropping of flower-buds by plants of such a miscellaneous nature as those you have enumerated is probably caused through the plants receiving too much or too little water, but we cannot be certain without fuller knowledge of the conditions under which the plants are cultivated.

MARKET GARDEN: *E. H. S.* The buildings are not exempt from taxation, and the land covered by them is assessed as land covered with immovable buildings would be. The ruling by the House of Lords on this matter will be found on reference to the *Gardeners' Chronicle* for August 12, 1899, p. 130.

MARKETING PRODUCE: *W. J.* The pressure upon our space is always very great, but we will consider your suggestion.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers, still less to casual readers, to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested*

to be so good as to consult the following numbers:—W. E. Gough. Apple, Benoni.—*H. V.* 1, Marie Louise; 2, Autumn Nelis; 3, Autumn Josephine; 4, Glout Moreau; 5, Baron de Mello; 6, Gansel's Bergamot.—*J. C. S.* 1, Emperor Alexander; 6, Northern Dumpling.—*A. Baker.* We think it a local variety, and do not recognise it.—*C. A. B.* 1, Summer Bergamot; 2, Van Mons, Red; 3, Bergamote Esperen; 4, Leon le Clerc Laval; 5, not recognised; 6, Soldat Laboureur.—*Cæwell.* 1, Annie Elizabeth; 2, Blenheim Pippin; 3, Gravenstein; 4, Maltster; 5, Fearn's Pippin; 6, Tower of Glamis.

NAMES OF PLANTS: See note under "Names of Fruits."—*W. P.* *Salvia Horminum.*—*J. B.* 1, *Ruscus hypophyllum*; 2, *Pieris floribunda*; 3, *Taxodium distichum.*—*Aloe.* 1, Not found; 2, *Erigeron mucronatus*; 3, *Arctotis grandiflora*; 4, *Othonopsis cheirifolia*; 5, *Cerastium Biebersteinii.*—*A. B. H.* 1 and 2 are forms of *Aster ericoides*; 3, *A. diffusus* var. *horizontalis.*—*C. H., Constantinople.* The plant (with fruit) is a *Coccinia*, presumably *C. indica.*—*F. B. W.* Not *Cryptomeria*, but *Cupressus funebris* in the adult state, and also in the young condition often called *Retinospora.*—*Zero.* 1, *Elaeagnus latifolius aureus*; 2, *Pieris floribunda*; 3, Cedar of Lebanon; 4, *Taxodium distichum*; 5, *Berberis stenophylla.*—*G. P.* *Juniperus sinensis.*—*R. T.* 1, *Liparis longipes*; 2, *Stelis micrantha*; 3, *Masdevallia simula*; 4, *Bulbophyllum Lobbii.*—*A. A., Devon.* 1, *Abies brachyphylla*, Japan; 2, *Pieris floribunda*; 3, *Schizostylis coccinea*; 4, *Lycesteria formosa*; 5, *Cotoneaster frigida*; 6, *Euonymus europæus.*—*W. A.* *Cypripedium insigne* and *C. i. Maulei*, the latter being the one with purple spots on the upper sepal.—*Edward.* *Ornithogalum lacteum.*

ROSES FLOWERING IN THE OPEN: *X. Y. Z.* Your specimen is not at all remarkable. We recently saw numbers in full beauty growing in the open air on the Kent coast.

SEASIDE PLANTING OF TREES AND SHRUBS: *E. R.* You will find in the issues of the *Gardeners' Chronicle* for November 25 and December 9 1899, and in that for January 13, 1900, exhaustive articles on this subject.

SEED FROM SOUTH AFRICA: *W. B. J.* *Felicia echinata.*

SHRUBS THAT FLOWER IN AUTUMN: *A. W.* Among the many handsome shrubs that flower during August and September and are suitable for planting in the borders are those following:—*Daphne cneorum*, *Kerria japonica*, *Abelia rupestris* and *A. triflora*, *Hibiscus syriacus*, *Jasminum officinale*, *Lithospermum prostratum* (dwarf), *Lycesteria formosa*, *Spiræa Douglasii*, *Symphoricarpos occidentalis*, *Clematis Flammula*, *Hypericum calycinum*, *Kalmia latifolia*, *Olearia Haastii*, *Osmanthus fragrans*, and *Calycanthus occidentalis*. You should not forget to include some plants for the effect produced by their autumnal foliage.

SPENT HOPS: *F. L. R.* As was stated on p. 344, we do not consider spent Hops to possess much manurial value.

TUBEROSE: *Young Gardener.* The Tuberose is attacked by a curious form of disease which may be new to this country. We will make further examination and report the result in next week's issue.

WOMEN GARDENERS: *Correspondent.* There are several colleges at Reading, Swanley, and elsewhere, where women are taught gardening. Perhaps you would obtain information of other places where women gardeners are employed on application to the Women's Agricultural and Horticultural International Union. The Employment Secretary is Mrs. Bryant-Sowerby, Royal Botanic Gardens, Regent's Park, N.W.

COMMUNICATIONS RECEIVED.—*J. C.*—*N. E. B.*—*W. W.*—*W. E. G.*—*W. M. W.*—*R. P.*—*Prof. Crie*, Rennes—*F. Claes*, Brussels—*F. G. F.*—*M. C.*—*Rev. H. G.*—*F. D.*—*J. R.*—*J. D.*—*H. C.*—*G. F. P.*—*Yorkshire Reader*—*J. A. S.*—*F. G. G.*—*J. A. C.*—*G. J. D.*—*J. B.*—*W. H. P.*—*W. H. T.*—*G. W.*—*W. S.*—*T. C.*, Brussels—*W. R. Fisher*—*Expert*—*E. W.*—*J. G.*—*W. S.*—*A. R. D.*—*W. M. W.*—*H. C.*—*T. H. S.*—*E. M. H.*—*A. N. Adamson*—*F. M.*—*Prof. Henriques*, Cambra.

PHOTOGRAPHS RECEIVED.—*W. Taylor.*

(For Weather see p. ix.)



VIEW IN THE GARDEN OF THE RT. HON. JOSEPH CHAMBERLAIN, M.P., HIGHBURY, BIRMINGHAM, SHOWING PART OF A RECENTLY FORMED ROCK GARDEN.



THE

Gardeners' Chronicle

No. 936.—SATURDAY, Dec. 3, 1904.

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ENGLISH GARDENS.*

ONE of the most attractive features about gardening is its diversity of aim and purpose. One man wants to grow Gooseberries and Cabbages. Another thinks he can buy these, and devotes his garden to something that he cannot obtain in this vicarious manner. Another is a collector, and loves to get about as representative an assemblage of plants as his means, his tastes, and his opportunities will allow. Then there is the specialist, who makes a hobby of his Roses, his Orchids, his Chrysanthemums, his Cactuses, or whatever group he fancies.

A very marked variety of specialist is the "florist," who devotes his energies to one particular flower, be it Auriculas or Carnations or Dahlias or any other that comes under the indefinable but readily intelligible category of "florist's flowers." He sets up an ideal standard of perfection, and tries to make his flowers, whatever be their natural tendency, conform to his ideal, which in general is neither that of the botanist nor of the artist, but a purely arbitrary and subjective notion. The botanist in his turn avails himself of his

garden for the purposes of study and comparison. To him it may be that what others would call a weed is for some reason or other invested with special interest. The commercial gardener, he who grows plants in the market garden or the nursery, regulates his procedures according to the demands of his clients and in obedience to the law of demand and supply.

All the preceding classes of gardeners tend their gardens for the sake of their plants, and with a view to their utility, their beauty, or their interest.

There is still a large class of gardeners to whom the garden is the primary consideration. They grow their plants and group them for the sake of the garden. The plants are considered from the same point of view as the bricks of the mansion to an architect, or the colours of the palette to the artist, as means to an end, and that end the decoration of the garden and the enhancement of its amenities. Under this heading come the landscape gardeners and the designers, to whom we owe the reposefulness, the harmonies, the contrasts, the adaptation to circumstances and position, the effects, and all that constitutes the special charm of the garden as a whole. Here, too, belong the artists, revelling in beauty of form and subtle combinations of colour.

The ideal gardener would be one who combined in due proportion all these qualifications. He should be first and foremost a cultivator, with a sufficient knowledge of botany and physiology to help him in his work and render him competent to deal with emergencies and unforeseen contingencies. In striving, as he should, after perfection, he should work up to a natural and not to an arbitrary standard. He should be an artist, and know how to group his plants to the best advantage, or how best to display their characteristics as isolated specimens or as components of a scheme of colour. Such an ideal gardener is hardly to be found. Differences of mental organisation and the necessity for "sub-division of labour" entail specialism. The most we can do is to secure as far as possible an adequate general knowledge before the attempt is made to specialise.

As are the gardens and the gardeners, so are the books about gardening. Their aims and purposes are as diverse as the gardens and those who work in them. The handsome book before us is an instance of specialisation. It is a book for the artist-gardener, if we coin such an epithet. It consists of a series of reproductions of water-colour drawings from the brush of Mr. Elgood, with which are associated notes from the pen of our ablest artist-gardener. The drawings are very beautiful, almost all devoted to the representation of formal rather than of natural gardens—of gardens that find their most appropriate place in the vicinity of the mansion or in association with architectural features. The colour-schemes that have arisen spontaneously rather than by design are a delight to the eye. The formality, it is true, is apt to be monotonous and oppressive, the clipped trees require to be employed with the greatest discrimination, or they become childish and offensive, and the tangle of herbaceous plants is sometimes as inappropriate and displeasing in its way as were in their time the distressing ribbon-borders and glaring

masses of "bedding plants." Take, for instance, the grand group of Orange Lilies and Larkspurs shown opposite p. 26—a startling contrast, but backed up with rich foliage in the background. As it is, it is noble—transfer it in imagination to the terrace-garden, and it would be ridiculous. A similarly beautiful group is that opposite p. 30, "Purple Campanula." The group shown in the very next plate, "White Lilies and Yellow Monks-hood," charming in itself, is rendered almost ludicrous by the intrusive absurdity of some clipped shrubs in the background. The sequaciousness of the public is answerable for this monotony. What one does another imitates, heedless of the fact that what is right and appropriate in one place may be wrong and unsuitable in another.

In a garden we look for character and purpose. The garden should not be meaningless, but each should have its own characteristic features and reveal the impress of its designer. His aim should be more or less obvious, the garden itself more or less suggestive. But it is not necessary to insist at greater length on such elementary considerations. Our present purpose is solely to commend to the notice of garden-lovers this very beautiful series of drawings, which will furnish endless suggestions; whilst Miss Jekyll's annotations will prove most helpful to those who, so far as they may, wish to carry them out.

NEW OR NOTEWORTHY PLANTS.

STELIS BINOTI, De WILDEMAN, *nov. sp.**

A NEW Orchid has recently flowered in the National Botanic Garden, Brussels. The plant was imported from Brazil in 1901 by M. Binot, well known for the Orchids and Palm-seeds introduced by him. M. E. De Wildeman, one of the "Conservators" of the Botanic Garden, furnishes the following description of the Orchid:—

This small species, introduced by M. Binot, has flowered uninterruptedly for several months. Judged by its small bracts, which are shorter than or barely the length of the pedicel, and by its racemes, borne several in one sheath, and coming into flower in succession, this species belongs to the sub-genus *Polystachya*, Cogniaux (*Fl. Brasil*, iii., 4, p. 343). The stems are slender, generally shorter than the leaves, unarticulate; the flowers are glabrous, and resemble those of *S. viridipurpurea*, Lindley. The latter species differs in having spotted and larger flowers; leaves measuring 6–9 cm. ($2\frac{1}{2}$ – $3\frac{3}{4}$ inches) long, and 15–23 mill. (about $\frac{3}{8}$ to $\frac{1}{2}$ inch) wide, and therefore nearly twice the width of those of *S. Binoti*; and it has a different venation. The midrib of *S. viridipurpurea*, Lindl., is distinctly prominent on the lower surface; the lateral veins are equally distinct. In *S. Binoti* the principal vein and secondary veins are not conspicuous on the lower surface; the latter are not even apparent, and the former is only visible on the back of the fleshy leaf as a fine and somewhat dark line. E. D. W.

* *Stelis Binoti*, De Wildeman, *nov. sp.*—Caules secundarii erecti, teretiusculi, unarticulati, 5 cm. circ. longi, 1–2 mm. crassi; squamæ membranaceæ, nervosæ. Folia subrecta, crassa, coriacea, rigida, uninervia, 5–8 cm. longa et 6–12 mm. lata, nervo mediano supra profundius canaliculato, subtus non prominente, venulis lateralibus obsoletis, petiolus crassus, supra profunde canaliculatus circ. 1 cm. longus. Racemi 1–3, multiflori. Flores virides, non maculati. Sepala membranacea, glabra, circ. 1 mm. longa et lata. Petala concava, brevissima, circ. 0.8 mm. lata. Labellum petalis æquilongum, cucullatum, marginibus erectis 0.5 mm. circ. longum. Columna erecta, minutissima, subclavata. Brasil (Binot, 1901).

* *Some English Gardens*, after drawings by George S. Elgood, R.L., with notes by Gertrude Jekyll; 4to., pp. 131, coloured plates 59; £2 2s.

ORCHID NOTES AND GLEANINGS.

BULBOPHYLLUM WEDDELI.

This interesting species was exhibited by F. W. Moore, Esq., Curator of the Royal Botanic Gardens, Glasnevin, Dublin, at a meeting of the Royal Horticultural Society on October 18, when it attracted much attention by the singular

"c. Side view of the ball and socket-joint of the labellum, resembling the head of an animal's femur fixed in one of the acetabula of the pelvis. The acetabulum is ridged as in animals, and the head of the labellum, like a femur, has processes in the style of the large and small trochanters. The head is also provided with an articular ligament to prevent the ball from slipping out of the socket, as in man and other animals."

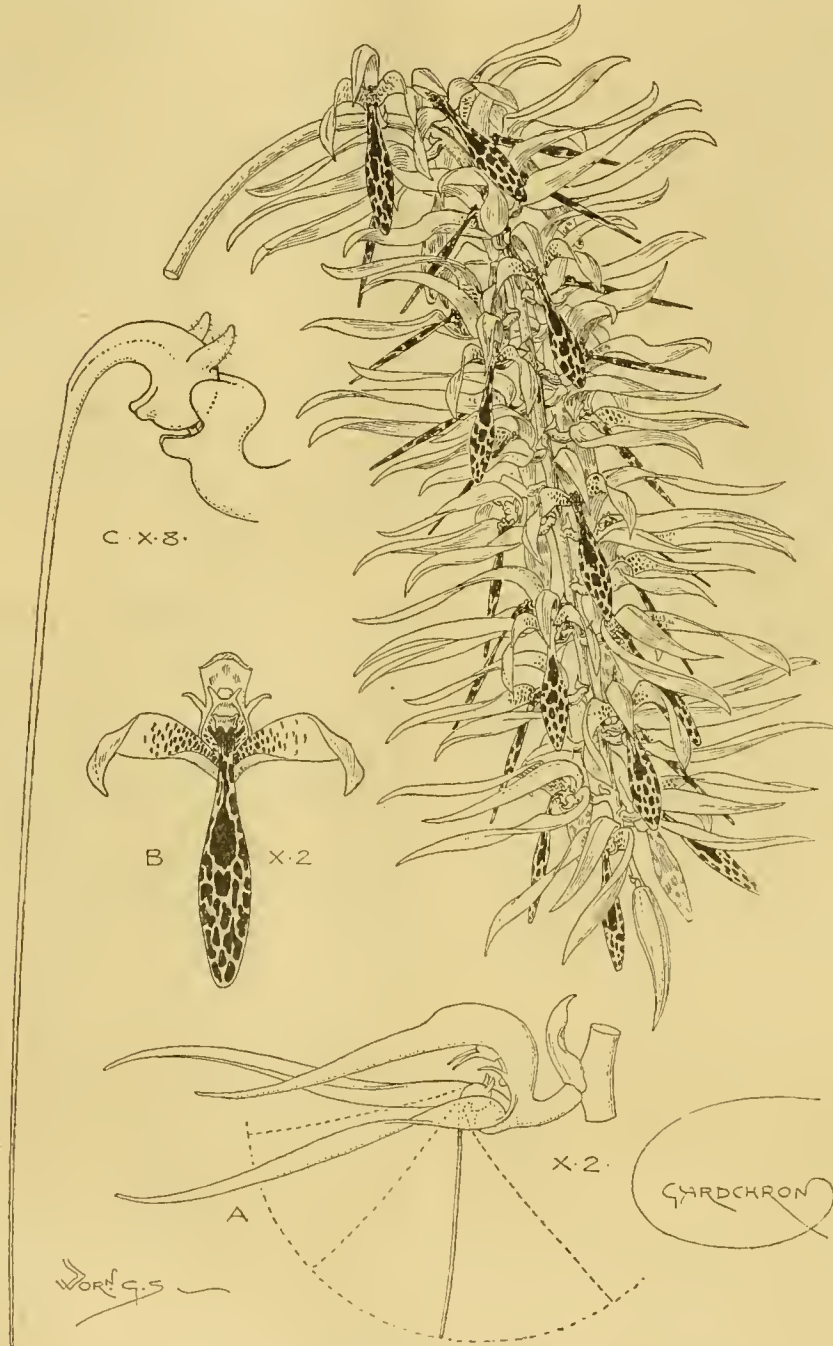


FIG. 167.—BULBOPHYLLUM WEDDELI.

movements of the lips, some of which were continually swinging by the action of the slight currents of air around it.

In making the drawing Mr. Worthington G. Smith noticed peculiarities of structure, which he illustrates and explains in the accompanying note:—

"A. Side view of bloom, showing swinging labellum $\times 2$.

"B. Front of bloom, the upper sepal cut off and the lateral sepals foreshortened $\times 2$.

The sepals and petals are greenish, with some indistinct olive-green markings; the lips of a glittering white, like mica, splashed with blackish-purple.

"BOG-TROTTER FOR ORCHIDS."

As the title plainly indicates this is not strictly a scientific work, neither is it devoted to Orchids alone, but other striking North Ameri-

* G. P. Putnam's Sons, New York and London: The Knickerbocker Press, 1904.

can plants and shrubs, which presented themselves to the author, Miss Grace Greylock Niles. During her explorations extending over several seasons in the Hoosac Valley of Vermont, New York and Massachusetts, U.S.A., are pleasantly introduced to the reader both by description and illustration. From the commencement Miss Niles takes her readers over the ground with her, describing the discovery of each of the plants, its surroundings, and the conditions under which it existed, the beauties of the scenery, and the many incidents with which her journeyings were varied. At every chapter evidence of the author's love of nature and the beautiful and varied character of the vegetation surrounding her is given, and something like the same enthusiasm would probably be imparted to many of the readers of her pleasant book, and especially those of her own sex.

The Orchids treated of are of course the terrestrial Orchids of North America, and prominence is given to the Cypripediums, coloured plates of which are given.

In the nomenclature of the species there are some departures from the names recognised by us. For examples, on p. 1, Cypripedium hirsutum and C. Reginae are mentioned, and further on illustrations of them are given. The former is C. pubescens Willdenow, for according to the *Index Kewensis* C. hirsutum (Miller's Gard. Dic.) is C. spectabile. The same authority gives C. Reginae as a synonym of C. spectabile, but the reference in Miss Niles' work, p. 244, gives priority to C. Reginae, Walter, published in 1791, and establishes its right to be recognised. At p. 282 an illustration of Limodorum tuberosum is given; in this case also the priority of Limodorum tuberosum, Linnaeus, 1753, over the generally accepted name Calopogon pulchellus, R. Brown, 1813, being the reason. But if priority were a sufficient excuse in all cases the much-abused genus Limodorum would include some Phaius, Bletias, Acrides, Calanthes, Dendrobiums, and members of many other genera very dissimilar. The book is pleasantly written, and the instructive and entertaining manner in which the vast amount of information relating to North American plants, and especially Orchids, is given, fits it not only for those who study plants, but for all who take interest in them and their natural habitats. The more serious scientific side of the question is provided for in an appendix of some forty pages, in which the "Orchids of New England" are enumerated and described. An excellent index is added, and the work is embellished by forty-eight half-tone and twenty-four coloured plates.

NITRATE OF SODA.—M. FOUSSAT, Professor of Horticulture and Botany at Hyères, has published the results of his experiments on the use of nitrate of soda in the case of numerous plants belonging to various natural orders. The pamphlet, which is entitled *Le Nitrate de Soude dans la Culture des Fleurs*, is illustrated with numerous figures, which show in the most striking manner the effects of the nitrate, whether used alone or mixed with ordinary garden soil or compost (*terreau*). "Check" experiments, in which no manure at all was supplied, were undertaken for the purpose of comparison. We cannot enter into detail, it must suffice to show that the nitrate was in all cases beneficial, especially when used in a diluted state. The most generally useful proportion for pot-plants was found to be 1 part of nitrate to 2,000 parts of water—in other words, one-half gramme (say 8 grains) to 1 litre (1½ pints imperial) of water. Eight or ten waterings with the solution were administered at intervals during the growth of the plant, and the greatest care taken to secure accurate comparative results.

BOUGAINVILLEA SPECTABILIS, CANNELL'S VARIETY.

MESSES. CANNELL & SONS send us flowers of a *Bougainvillea* under the name of *B. Cannelli*. It is, however, not a distinct species, but a colour variation of *B. spectabilis*, and as such very remarkable for its large, oblong, obtuse, brilliant

is perhaps also only a variety, but it differs in its nearly glabrous condition, in the leaves, which are smaller than those of *B. spectabilis*, and in the bracts, which are also smaller and generally more gradually tapering to a point. The perianth-tube and the ovary are nearly, if not quite, glabrous.

There are some eight or ten species in all,

subsequently received bore curved spines such as are generally found in this and other species.

The latest monograph of the genus is contained in the *Monographie der Nyctagineen*, von Dr. Anton Heimerl, lxx. Bandes der Denkschriften der Mathematisch - Naturwissenschaftlichen classe der Kaiserliche Akademie der Wissenschaften. Wien, 1900.



FIG. 168.—BOUGAINVILLEA SPECTABILIS "CANNELL'S VARIETY:" BRACTS BRIGHT ROSE-PINK COLOUR; SECTION THROUGH A BRACT WITH THE PERIANTH TUBE.

rose-pink bracts, quite different in colour from the ordinary mauve-coloured bracts of the typical *B. spectabilis* or the reddish-brick-coloured bracts of the variety *lateritia*. In fact the species, which occurs in Brazil and also in Central America, differs much in the colour of the bracts, the size and form of the leaves, and the degree of hairiness. The outer surface of the perianth tube as well as of the ovary is usually markedly hairy.

B. glabra, which is found in the same countries

natives chiefly of South America; but the only two in cultivation, so far as we know, are *B. spectabilis*, with its numerous varieties, and *B. glabra*. If choice has to be made, the former should be preferred for appearance sake. Whether the two plants differ in their cultural requirements we do not know. In some of the very mildest corners of Great Britain these species may be grown in the open-air.

The specimen from which the illustration (fig. 168) was taken had no spines, but others

PALMS IN THE SINGAPORE BOTANIC GARDEN.

—The July number of the *Agricultural Bulletin* of the Straits and Federated Malay States contains, among various articles relating to the rubber industry, a complete list of the Palms growing in the Botanic Garden at Singapore. No fewer than 236 species in ninety genera are grown in the garden, under the direction of Mr. H. N. RIDLEY. Palm-seeds should always be packed in damp charcoal or damp sawdust, else the small germ or embryo plant may get dried up.

THE CULTIVATED SPECIES OF MANETTIA.

THE genus *Manettia* belongs to the *Cinchona* tribe, and is exclusively American, ranging from Mexico and the West Indies in the north, to Uruguay and the Argentine Republic in the south. Even excluding such species as *M. asperula*, Ball (which is a *Sabicea*), the number falls not far short of forty, of which nearly three-fourths inhabit either the Andes or Brazil. One of the most peculiar forms is *M. canescens*, which grows between 12,000 and 13,000 feet above sea-level on the mountain of Pichincha, near Quito, Ecuador. This has all the characters necessary to withstand the low temperatures and high winds which prevail in the upper regions of the Andes, its leathery leaves with reflexed margins and woolly lower surfaces clearly proclaiming it a high-level plant. That the stipules are very noticeably larger than in the other species of *Manettia* is also suggestive.

Most *Manettias* are beautiful stove climbers, with red, yellow, or white flowers, and are very ornamental when grown on a trellis or pillar. When several years old some of the species are apt to run too much to leaf, but with a little judicious pruning they will give a good show of flower. Perhaps the most satisfactory way, however, is to raise fresh plants each year from cuttings of the young shoots, which should be placed in sandy soil with bottom-heat.

There are, so far as we are aware, only five species of *Manettia* cultivated in Europe at the present time; these are known in gardens as *M. cordifolia*, *micans*, *coccinea*, and *bicolor* respectively, two distinct species being confounded under the last name. The *Manettia miniata* described by Lemaire in *Flore des Serres*, iv. (1848), t. 317, seems to have disappeared altogether.

1. *M. CORDIFOLIA* OF GARDENS.

The first thing to notice about this plant is that it is not the original *Manettia cordifolia*, Martius; its correct botanical name is *M. glabra*, Cham. and Schlecht. The true *M. cordifolia* is a pubescent plant, with spreading corolla-lobes and included stamens, as is stated on p. 19, and clearly shown in plate 7 of Martius's *Specimen Materiae Medicæ Brasiliensis*; whereas *M. glabra* is quite glabrous, and has reflexed corolla-lobes and conspicuously-exserted stamens. *Manettia glabra* has been figured under the name *cordifolia* in the *Botanical Magazine*, t. 3202; *Botanical Register*, t. 1866; *Paxton's Magazine of Botany*, ii., 267; and *Maudslayi's Botanist*, ii., t. 87. The only author who adheres to the correct name *glabra* is David Don, in *Sweet's British Flower Garden*, series ii., t. 233. The true *M. cordifolia* of Martius seems never to have been introduced into cultivation, and has hitherto been recorded only from the provinces of Minas Geraes and Rio de Janeiro, in Brazil. *M. glabra* is a native of Uruguay, the Argentine Republic, Paraguay, and South Brazil, and is one of the many plants introduced into cultivation by Tweedie, who collected specimens and seeds of it in woods on the banks of the river Uruguay, and brought it to Buenos Ayres, where he records that in four years it became "one of the greatest ornaments of the *patios*" of that town, being "permanently covered with flowers," and "frequently adorned by the beautiful humming-birds which feed upon its flowers." It has a crimson corolla, and usually flowers about December.

2. *M. MICANS*.

This species, which is considered by some to be the finest in the genus, belongs to the same section as *M. glabra*, and like it has a quadrangular corolla and an elevated cushion-shaped disc. It differs in the larger flowers with spreading corolla-lobes and nearly sessile anthers, and in having relatively shorter petioles

but its chief merit consists in bearing several flowers together on short axillary branches, thus giving a greater mass of colour. An excellent figure of this plant is given in the *Botanical Magazine*, t. 5495. The colour of the flowers is a bright red-orange. The geographical distribution is interesting. There are two distinct forms of the species, one with broad leaves, which inhabits the Andes of Peru, Bolivia, and the Argentine Republic, occurring at various altitudes between 3000 and 8000 feet above sea-level; the other with narrow leaves and fewer flowers, which is found in the upper courses of certain Peruvian and Bolivian tributaries of the Amazons. It would appear that *M. micans* has originated in the Andes, and descended some little distance into the Amazons' basin, rather



FIG. 169.—*MANETTIA INFLATA*. (SEE P. 385.) Reduced. 1, section through a flower; 2, 3, floral details.

than *vice versa*; otherwise it would scarcely have been so strictly confined to the upper part of the Amazons' system. Of course, such a question as this is extremely difficult to settle, since altered physiographical conditions may profoundly modify the area occupied by any species. The Argentine plant described by Grisebach under the name *Manettia leianthiflora* is merely the andine form of *M. micans*.

3. *M. COCCINEA*.

M. coccinea belongs to a very different section of the genus, in which the disc is hollow and adnate to the calyx-tube. The corolla is salver-shaped, and is said to be scarlet in colour, but judging by the figure in the *Botanical Register*, t. 693, it seems to be purplish-pink. We have seen no living specimens of this species, however. The throat is closed with yellow hairs, which give the flower a very characteristic appearance; but perhaps the most striking thing is the number of the sepals, which are apparently eight, four of them being really of stipular nature, however. The specific name *coccinea* was given to this plant because it was supposed to be identical with the *Nacibea coccinea* of Aublet, which is a native of Guiana; but although *Manettia coccinea* has quite a wide distribution,

occurring in Mexico, Central America, the West Indies, and Colombia, we have not seen a single specimen from Guiana, and believe that *Nacibea coccinea* is a distinct species, unless indeed Aublet's figure in his *Histoire des Plantes de la Guiane Francoise*, t. 37, be atrociously bad. The flora of French Guiana is much less known than that of either Surinam or British Guiana, and it is highly probable that the original of Aublet's *Nacibea coccinea* will turn up some day. It should be noticed that the lettering of figures 1 and 2 on plate 37 is reversed; the left-hand figure (which has an eight-lobed calyx) is really fig. 1, the right-hand figure (with a four-lobed calyx) is fig. 2.

Manettia miniata, Lem., is known only from the figure and description in *Flore des Serres* (vol. iv., t. 317), but these are sufficient to tell us that it belongs to the same section as *coccinea*. Lemaire states that it is closely related to the Peruvian *Manettia hispida*, and a still nearer ally has recently been collected by Mr. H. H. Smith (No. 1393) in the province of Santa Marta, Colombia; it is therefore highly probable that *M. miniata* will eventually prove to be a native of the Andes. It may be noted in passing that Schumann, in *Martius's Flora Brasiliensis*, vol. vi., part vi., refers *M. miniata* with a query to both *M. ignita* and *M. coccinea*. The former reference is obviously a clerical error, and we are convinced that nineteen botanists out of twenty would disagree with the latter, after comparison of the figures of the two plants.

4. *M. BICOLOR*.

This species, as the name indicates, is distinguished from most others of the genus by the colouration of its corolla, which is scarlet in the lower two-thirds and yellow above. In *Paxton's Magazine of Botany*, x., 27, where it was first figured, it is said to have been found on the Organ Mountains, in Brazil, by William Lobb; and there are dried specimens of it in the Kew Herbarium, collected by Dr. G. Gardner at the Rio Parahyba, in the same district, in March, 1841. Gardner, in his *Travels in the Interior of Brazil*, ed. 2, p. 402, mentions that in one of his excursions in the Organ Mountains he found a path ready made for him up one of the peaks, as it had been ascended by Lobb about six weeks before his visit.

There are two forms of *M. bicolor* which have been described as distinct species: one, a narrow-leaved form, is *M. filicaulis*, figured by Wawra in his *Itinera Principum S. Coburgi*, t. 17; the other, which has broader calyx-lobes, was described by Bentham as *M. luteorubra*. Both of these are regarded by Schumann (in Martius's *Flora Brasiliensis*, vol. vi., part vi., p. 175) as conspecific with *M. bicolor*; and with this view we are in entire agreement.

Manettia bicolor seems to have become quite a favourite plant soon after its introduction, owing, no doubt, to the pleasing combination of colours in its flower. The figure in *Paxton's Magazine* was copied a few years later into *Flore des Serres*, vol. ii., 1846, pt. 1, t. 6, where the colouring is extremely bad. A portion of the same figure is again copied into *Gartenflora*, 1898, p. 214, fig. 62, and a rather larger piece is reproduced, reversed, in *Journal of Horticulture*, ser. 3, vol. xxxvii., p. 483. The only original figure of *M. bicolor* besides the one in *Paxton's Magazine* seems to be that in the *Revue de l'Horticulture Belge*, xxi., 1895, p. 49, a somewhat coarsely executed plate.

As a matter of historical interest, it may be noted that the earliest published name for this species is *M. auratiflora*, Silva Manso (*Enum. Subst. Braz.*, p. 25), but the name *M. bicolor* has become so well known that many botanist will hesitate to replace it by one which appeared so long ago as 1836 in a little-known pamphlet published at Rio de Janeiro, and which has apparently been lost sight of till the present date.

5. *M. INFLATA*.*

This species (see illustration on p. 384) has hitherto passed under the name *M. bicolor*, and was figured as such in the *Botanical Magazine*, t. 7776, but is quite distinct. It differs from the true *bicolor* in its foliaceous reflexed calyx-lobes, in the corolla, which is much swollen at the base and covered with coarser hairs in the anthers, which are not apiculate, and in the relative lengths of the parts of the flower. The yellow part of the corolla is much smaller than in *bicolor*, and the style in the long-styled plant is about the same length as the corolla-tube, whereas that of *M. bicolor* is conspicuously exserted. *M. bicolor* is a native of the Brazilian Provinces of Rio de Janeiro, São Paulo, and Minas Geraes, and does not occur in either Uruguay or Paraguay, which are the home of *M. inflata*. *M. inflata* has been in cultivation in the Water-Lily-house at Kew for some considerable time; as it is rather finer than *M. bicolor*, and is rarely out of flower, it should prove a valuable plant.

In conclusion it may be stated that the present article is the outcome of a study of all the species of *Manettia*, and that especial care has been taken to distinguish between specific differences and such as are due to heterostylism. For instance, in the case of *M. glabra* and *M. cordifolia*, short and long-styled forms are not differentiated, and the exertion of the stamens can therefore be taken as a specific character. T. A. S.

BOOK NOTICE.

ENGLISH ESTATE FORESTRY.†

MR. A. C. FORBES, the writer of this treatise on English estate forestry, has recently been appointed Lecturer in Forestry at the Durham College of Science, Newcastle, a post formerly held by Dr. Somerville, Assistant-Secretary to the Board of Agriculture. Before assuming this appointment, which besides lectures on forestry includes the duties of expert adviser to the landowners in the more northern counties, Mr. Forbes held charge of the woodlands of the Marquess of Bath, at Longleat, and had previously been forester to the Marquess Lansdowne. He also last spring gained an important prize offered by the Carpenters' Company for an essay on "The Adaptation of Land for Afforestation." He has spent some time at the German Forest School at Eberswalde, and has thus gained an insight into Continental forestry, besides what he has learned from having visited some of the French and German forests.

The author therefore belongs to both the old and to the new schools of British forestry, regarding which there has been much controversy of late; and, as he states in Chapter I. of the present book, "it is apparent to those who have closely studied the question that English forestry must

possess certain characteristics of its own, and any attempt to revolutionise English woodlands and adopt the Continental style in its entirety will end more or less in failure," it will be as well to give some account of this controversy.

It is most graphically depicted in the *Introduction to the Study of Forestry in Britain*, by Sir H. G. Hewett, Bart., recently published by the London Country Gentleman's Association, 2, Waterloo Place, Pall Mall, the writer of which pamphlet makes the most scathing comments on writers of the old school, to whom he attributes the following defects:—

1. Borrowing from one another without any acknowledgment, and a vague, non-committal style of writing.

2. Ignoring the shade-bearing power of various species, and attributing to drip the power to kill trees.

3. Advocacy of wide planting and the production of a small number of trees per acre.

4. Ignorance of the scientific thinning of woods and the adoption of Brown's erroneous system of thinning.

5. Rough-and-ready methods of measuring trees and the use of the "number of trees per acre," instead of the volume of timber in a crop.

6. Placing an undue value on personal experience, instead of relying on observations made by generations of foresters.

7. A sublime indifference to the existence of the new (Continental) method; this, Hewett considers the chief obstacle to the advance of scientific forestry in these islands.

To judge the present book according to Hewett's standard, it may be at once noted that Forbes strongly condemns the system of forestry based on Brown's handbook, *The Forester*, which was published in 1850. He says, "It is to Brown and his school that we owe the mixed plantation, a system of planting that has led to some of the worst results that could possibly be obtained. This system ignores the sylvicultural requirements of different species, and the majority of mixed plantations formed during the last fifty years have produced timber of low economic value." Excessive thinnings and open unproductive woods, in which the soil is exposed to wind, sun and weeds, are another legacy of Brown's, and the bad effects of these are clearly set forth in the book under review.

The fact appears to be that there need be no opposition between Continental and British forestry. The latter should be an adaptation of the generally acknowledged results of the experience of scientific foresters throughout the world to the special conditions of our own country, which admission appears to be the best way of terminating the controversy.

So much for the general tendency of this book, which the author, in a notice issued before its publication, wishes to be considered merely as suggestive and in no way as a textbook of forestry.

The chapter on "English Forestry in the Past" is well written and although not so complete as the corresponding chapter in *Our Forests and Woodlands*, by J. Nisbet, brings up the history to more recent times than the latter. An authoritative history of British forestry has still to be written, and especially with regard to the Beech woods of the Chiltern Hills, probably the only natural woodlands left in these islands.

The present condition of English forestry is well described, and Forbes sums it up as follows: "The final result of the mixture of sylviculture and arboriculture is usually good wherever a definite aim has been kept in view for a number of years, and work has been carried on on principles generally recognised as correct. It is invariably bad whenever the management is based more or less on lines that fluctuate from

year to year, and the work is carried out on wrongly applied principles," or he might have added "on wrong principles."

The question of suitable land for planting is fully discussed, and the enormous area of English land that is unsuitable for profitable agriculture referred to, and it is stated that the present area of 1,665,741 acres of English woodlands, about 5 per cent. of the land in the country, might be doubled without taking an acre of useful ground from the farmer or grazier. Hants, Kent, Surrey, and Sussex are wooded to the extent of 10 to 13 per cent.; while Yorkshire, Cumberland, Northumberland, and Durham, which include vast areas of waste land, contain only 2 to 4 per cent. of woods. The areas of mountain and heath-land, given in the "Agricultural Tables," might with advantage have been added in the tabular statement of the woodlands in each English county. The author hardly attaches enough importance to the system of coppice-with-standards, a very old form of English woodland, and constituting more than half the area of the $4\frac{1}{2}$ millions of acres of the communal forests of France, and at least half of the private forests ($13\frac{1}{2}$ million acres) of that country. It is quite true that underwood is not now always saleable, but there are many localities where it is so, and matters may be greatly improved in this respect by increasing the number and age-distribution of standards, the rotation and size of the underwood, and by substituting Ash, Sweet Chestnut, and Alder for inferior material. This is now being done at Princes Coverts, Oxshott, Surrey, and in the High Meadows Wood in Gloucestershire, while underwood is readily saleable in Devonshire and Cumberland, and in the home counties.

Coppice-with-standards is probably the only way in which Oak and Ash timber will be produced on anything like a large scale by private owners, and the substitution of Conifers everywhere for Oak and Ash would be deplorable. Coppice-with-standards affords excellent pheasant covers, and if they have degenerated under past bad management that is no reason for abandoning them altogether. The author is quite right in relying on Douglas Fir in suitable localities as the best species for replanting coppice, as its rapid growth soon kills out invasive stool shoots.

We find the usual list of trees that are profitable to plant, except that the tree Willows and Sycamore are omitted. It is surely time to call Scots Pine by its proper name, and not Scots Fir, as the tree is not a Fir; it would also be well to distinguish between the Pacific and Colorado Douglas Fir, as the sylvicultural requirements of these trees differ. It is the result of experience in France that Sweet Chestnut will not thrive above limestone where there is more than 4 per cent. of lime in the soil; and this species is not therefore, as the author implies, indifferent to the chemical nature of the soil.

Oak, Ash, Beech, and Scots Pine are given as the only species for which natural regeneration is practicable in England; but Spanish Chestnut regenerates itself easily by seed on the Bagshot sands; and so will Silver Fir almost anywhere in Britain, provided the soil is deep enough for this species.

Forbes's remarks on thinnings are judicious, and, as he says, nothing should be taken out in thinnings that conduces to the ultimate good of the main crop. He would, for instance, leave-suppressed trees of shade-bearers under light-demanding trees, and is a strong opponent of leaving a thin crop of the best trees with no underwood to protect the ground from sun and weeds, and from dry side winds.

The chapters on landscape forestry and park timber are probably the best in the book, and nowhere have I seen this subject so ably dealt with. In the chapter on the "Enemies of English

* *Manettia inflata*, Sprague, sp. nov.—Ramuli satis robusti, subquadrangulares, breviter depresso-pilosi. Petioli $\frac{1}{2}$ — $\frac{3}{4}$ poll. longi, supra canaliculati. Lamina ovata, apice acuto recurvo, interdum acuminata, $1\frac{1}{2}$ — $2\frac{1}{2}$ poll. longa, 6—13 lin. lata, utrinque puberula. Stipulae depresso-deltoides, glanduloso-ciliatæ. Flores (longistylis solum visi) ramos breves axillares bifolios claudentes, pedicellis $\frac{3}{4}$ — $1\frac{1}{2}$ poll. longis. Ovarium obconicum $1\frac{1}{2}$ —2 lin. longum, pilosum. Calycis segmenta ovata acuta, basi contracta, 4—7 lin. longa, 2— $3\frac{1}{2}$ lin. lata, pubescentia vel puberula, denticulis subulatis vel triangulari-subulatis interpositis, interstitiis vel sepalorum bases glandulosas. Corolla late cylindrica, basi ampliata, tubo $8\frac{1}{2}$ —9 lin. longo, ore $2\frac{1}{2}$ lin., medio 2 lin. basi 3 lin. diametro, lobis deltoidibus obtusis $\frac{3}{4}$ —1 lin. longis, demum patentibus, extra hispida, intus annulo pilorum 2 lin. supra basin. Stamina $4\frac{1}{2}$ lin. supra basin inserta, filamentis brevissimis, antheris oblongis laud apiculatis, 2— $2\frac{1}{2}$ lin. longis. Discus pulvinaris, 4-lobus, $\frac{1}{2}$ lin. altus. Stylus corollæ tubum subæquans vel vix superans.

† *English Estate Forestry*, by A. C. Forbes, F.H.A.S., Lecturer in Forestry, Durham College of Science, Newcastle-on-Tyne. (London: Edward Arnold, 41 and 43 Maddox Street, Bond Street, W. Price 12s.)

Woodlands," the remarks on the Larch-blisters are excellent. The author considers the blister, whenever it becomes really dangerous to the crop, as a proof of the locality being unsuitable for Larch, or to the trees having been badly planted and tended. "Some consideration must be paid to the tastes of the Larch, if success is desired, and the practice of sticking it in everywhere is not a more judicious proceeding than that of many other practices in British forestry." The fungus (*Dasyscypha calycina*) is everywhere saprophytic on dead stems and branches, and where it is really parasitic and dangerous, it is rather the effect than the cause of the bad health and unthrifty condition of hundreds of English Larch plantations. The evils caused by rabbits are well depicted, and Forbes admits that even with wire-netting and clear-cutting the forester has a very uphill task wherever rabbits abound.

The last chapter deals with the English forester, and the author pertinently asks, Why is a forester employed on all kinds of odd jobs on an estate? A farm bailiff does not manage the carriage horses, nor does a gardener grow Oats and Mangolds. Why, then, should a forester be a general foreman to two or three estate departments? To an intelligent forester the amount of the salary is not so important as the fact that he feels that the woodlands are his special charge. He should receive orders directly from the owner, and provided that he works on a well-designed working-plan, and that his intelligence and perseverance in carrying out its provisions are ascertained by proper supervision, that should be the limit of his activity. As not much is done in the woods during June and July, the forester and his gang of labourers may be employed on haymaking, &c., during those two months; but for the rest of the year the woods only should occupy their energy. The ordinary forester on an estate is not competent to draw up a working-plan, but no one can be more grateful than an intelligent woodman when the owner of an estate gets a competent person to prepare a working-plan for his woods, for their management during the next twenty years, after the acceptance of which by the owner the woodman can proceed to work on without unnecessary interference, to the great advantage of the woods.

This book on English estate forestry is very readable, and should form part of the library of every woodland owner. *W. R. Fisher.*

CHRYSANTHEMUMS.

HAIRY CHRYSANTHEMUMS.—Very few of these varieties are now met with at the shows, and there is no doubt but that the temporary interest aroused in the section has all but subsided. For decorative purposes a few have survived. Hairy Wonder seems to be the best, for sometimes it is the only representative of its type to be found. Esau is a bright silky-pink flower that is useful where variety is sought for, and is of a purer shade than some in that colour. S. T. Taggart is rather larger than the last-named variety and is pure bright yellow. Leocadie Gentils is somewhat similar. Notwithstanding many others are still catalogued by the dealers, there seems to be little demand for them, and those above-named are all that I have seen this season in anything like presentable form. In France many of the exhibitors use the hairy varieties in their decorative groups, and under the French climate these kinds appear to develop a brighter tint and a peculiar glossy texture of floret that is always wanting in the hairy varieties grown in and around London. *C. Harman Payne.*

CHRYSANTHEMUMS AT GLASGOW.

That the citizens of Glasgow are well provided for in the way of public parks is well known to those who have seen them, and the privileges afforded the inhabitants in these fine establish-

ments are rendered much greater by the spacious glass structures which provide special facilities for a display of Chrysanthemums, ever favourites with the people; and this year Mr. Whitton, the able Superintendent of the Parks, and his staff have succeeded in placing very fine displays before their constituents.

The fine establishment at Queen's Park, under the charge of Mr. M'Iver, contains one of the best public displays of Chrysanthemums in Glasgow. Its spacious glass structures present a splendid collection both of large blooms and of decorative varieties. The bulk of the large flowering plants are arranged in undulating banks, relieved by outstanding plants. In this house there have been about 4,000 flowers, the majority of excellent quality. Among the best varieties noted were the favourite Mrs. Barkley, Mrs. C. Harman Payne, N.C.S. Jubilee (excellent), Bessie Godfrey, Mrs. J. Ritson, Viviani Morel, R. Hooper Pearson (very fine), Lady Byron, Charles Davis (good), Mrs. J. W. Barks, Mrs. F. W. Vallis, Exmouth Rival, F. S. Vallis, &c.

Decorative varieties are largely cultivated, and some of the popular exhibition varieties make good plants when but little disbudded. Among the decorative varieties were Market Pink, Mrs. Kirk, Elsie, La Triomphante, Source d'Or, Bessie Chapman, Nellie Brown, Emily Grunnerwald, the old Margot (not easily surpassed as a decorative plant if well cultivated), W. Stevens, Triomphe de Lyon, and many more. A batch of later-flowering plants will carry on the succession until Christmas. It is surprising what good results are obtained in such a smoky neighbourhood as that of Glasgow.

At the Botanic Gardens it has for some years been the custom to make a Chrysanthemum display in the Kibble Palace. This year the number of plants grown has been slightly reduced, and an improvement effected by removing the plants to the two wings at the entrance instead of grouping them in the centre. Mr. Rorke, who has charge of the indoor department, has succeeded in producing some excellently-flowered plants, as well as a good many grown for decorative effect. Among the best in both sections have been the following:—Mrs. Barkley, Amiral Avellan, Dorothy Dewar, Mrs. G. Mileham, Le Grand Dragon, Madame Georges Bruant, Mrs. Mease, Madame Gustave Henry, Mrs. C. H. Payne, Surprise, with the single Miss Rose, Mary Anderson, and others. It is not the intention of Mr. Whitton to extend the display of Chrysanthemums here, as it would hardly be in keeping with a botanic garden.

The display in the Tollcross Park is an excellent one, showing the cultural skill noticeable in this park, under the charge of Mr. Wilson. Here, as in the other parks, much use is made of decorative Chrysanthemums, and I noticed a number of specially fine plants of the old single Miss Rose, of exceptionally good colour. Late-rooted cuttings are also largely employed, and are found exceedingly useful for the stages, where the taller plants could not be employed to advantage.

At Springburn Park, which has been under the charge of Mr. Thomson since the death of Mr. Moore some time ago, there has also been an excellent display, the plants being well cultivated, both those grown for large blooms and those for decorative effect. Great use is made of the early and other smaller-flowered forms, but a considerable proportion of large blooms are grown.

In addition to these exhibitions, there has also been one in the People's Palace at Glasgow Green. This has been very good, but as the plants are grown at the Queen's Park, and include the varieties mentioned as in bloom there, they need not be remarked upon further. It will be observed that many old varieties are grown, as these have been proved suitable for the requirements of the parks, which largely differ from those of establishments where the Chrysanthemum is grown for exhibition. *S. A.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Vanda teres having now made sufficient growth for the season should be kept less moist than in summer, but not so dry as to cause the stems to shrivel, or many of the lower leaves will fall off. The plant should be kept in the lightest position in the Mexican-house, the temperature being about 55° to 60°, and if afforded an occasional syringing overhead on warm, sunny days, each stem will flower profusely at the proper time. *Vanda* "Miss Joaquim" requires similar treatment while at rest, but it enjoys a few degrees more warmth. *V. Hookeriana* we keep in the warmest house the whole year round, and expose the plants to all the sunlight available.

Pleiones.—The varieties of *Pleione* mentioned in my Calendar for October 29 have now passed out of flower, and as new roots are beginning to push out from the green shoots from which the flowers have sprung, the plants should be repotted at once. Pots or shallow pans may be used; pans are more convenient, as being light they may be easily suspended. Ample drainage is necessary, as the plants require large quantities of water when in full growth. Let the potting material consist of fibrous peat, loam, and chopped sphagnum-moss in equal parts, well mixed with a moderate quantity of broken crocks and coarse silver-sand. After being repotted place the plants near to the roof-glass of any house kept at an intermediate temperature. For a week or two little or no water should be given, and afterwards only often enough to keep the compost moist. When there are abundant roots and foliage, water may be applied frequently and copiously.

Trichoplias.—*Trichopilia fragrans nobilis*, perhaps better known as *Pilumna nobilis*, is now in flower, and it is one of the very best of white sweet-scented Orchids we have. It is a plant that thrives exceedingly well in the leaf-soil mixture, but the plants should not be disturbed for repotting until about March. From the present time and until growth recommences afford enough water to keep the compost just moist, but never wet. This *Trichopilia* requires but a trifle more heat than the *Odontoglossums*. It may be grown successfully at the warmest end of the cool-house, or in any moist house where the temperature does not fall below 50°. The plants prefer a light position, but strong direct sunlight quickly turns their leaves from the darkest green to yellow. The rare *T. rostrata* and *T. brevis* require similar treatment. Such well-known species as *T. coccinea*, *T. suavis*, *T. s. alba*, *T. crispa*, *T. marginata*, *T. Galeottiana*, *T. lepidia*, and *T. Wageri*, all require an intermediate-house temperature. The majority of these plants have now made up their growths, and care must be taken not to over-water them, or their leaves will quickly become spotted.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Work in frosty weather.—Severe weather may prevent the further planting of fruit-trees for a time, but there is plenty of work that can be done in frosty weather; and if it be done then there will be no hindrance to planting operations when the conditions are again favourable. Get plenty of shreds and ties prepared for use upon wall trees. Examine the labels, &c., on fruit-trees, and replace any that have become ineffective. Those labels made of lead and having the names stamped upon them are amongst the most durable. At the same time a properly prepared list should be kept as a complete guide to the fruit-garden should the labels at any time be lost or misplaced. Strawberry pegs for layering should also be prepared and put into some safe place until required. Nets for the protection of fruit-buds and fruit should be stored in some dry place, where they are not likely to get damaged. The wheeling of manure and other requirements for top-dressing should be done in frosty weather if possible, making good any weak posts and stakes in the Raspberry quarters, and affording stakes to any fruit-trees that may need support.

Pears succeed well when grown in the bush form. While there should be plenty of healthy trees to produce a constant supply of fruit to meet the demand, it is not advisable to plant more trees than are really necessary, as the fruits when ripe will not keep long, and must either spoil or be quickly got rid of in some way or another.

Figs.—In the majority of seasons these need no protection, but should the weather prove very severe, if the branches are not lightly covered with some protective material the tips may get nipped. A few bracken fronds tied amongst them, or evergreens pushed behind the branches will protect them a great deal, and will suffice in most cases. Some gardeners, however, take them from the walls and tie them up in bundles, and then use some straw or Ferns to protect them, tying this over the bundles of shoots and branches.

Cuttings of Gooseberries, &c.—During midday, when the frost is out of the shoots, provided a sufficient quantity of cuttings has not been prepared, cuttings may now be taken from the bushes, and after preparation be tied in bundles and embedded by the heels in soil till such times as the land and weather permit of their being inserted into the ground properly. In the case of Gooseberry-bushes or Red and White Currants, I prefer a clean stem of 9 inches or thereabouts from the ground-level to the lower branches, and therefore take out several of the lower buds for that purpose. White Currants should be grown against walls for supplying fruits for dessert, the bunches and berries growing to a large size if planted in good soil and kept pruned and neatly trained. Some Red Currants should also be grown against walls for late use, as they can be easily protected in such a position. Such trees are best trained on the gridiron method, each branch being allowed sufficient room to admit of air and light; those varieties on which the fruits will hang late should be allowed rather more space than those intended to be gathered earlier.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cucumbers.—The greatest evils at this season to be guarded against are over-cropping, over-crowding, admitting cold air, or allowing continual firing to cause the atmosphere to become excessively dry. Damp the surfaces in the house in the morning and afternoon, but avoid wetting the fruits; afford water to the roots about once a week and maintain a temperature at night of 60° to 65° and by day 10° higher. Use flowers-of-sulphur against mildew and fumigate lightly for aphides.

Vines.—Vines from which the fruit has been gathered and the foliage has fallen should be pruned as soon as possible, because it will secure rest for the canes, and the wounds will heal thoroughly before the sap again becomes active. We make it a rule here to have all Vines pruned during the month of December, and consequently it is never necessary to dress the wounds with styptic to prevent bleeding. Thoroughly cleanse the Vines, also the wood-work in the house and the glass with soft-soap and warm water. Do not paint the rods with any mixture, but they may again be washed during the resting season. I always feel exceptional interest in Vine borders as soon as the Grapes have been cut. We sweep clean away the light mulching that has covered the borders for about twelve months, and it is interesting to see how the Vine roots have been rambling about over and through the uneven surface of whole turves. When the borders have been swept clean they are given a good watering with diluted drainings from the stables, yet of sufficient strength to destroy numerous insects in the soil, and to even stain the paint upon the woodwork in the house with the ammonia rising from the water. This has been our practice yearly, with favourable results. The whole border is then covered with a considerable quantity of wood-ashes, half-inch bones, charcoal, lime-rubble, with whole turves dropped at regular distances and made firm, as described in the Calendar for January 23.

Pines.—Supply guano-water to plants that are swelling their fruits, applying the liquid at the same temperature as that of the soil in which the roots are growing. High temperatures produced by artificial means have a drying effect upon the

atmosphere, and the exercise of considerable discretion is necessary during severe weather. When the fruits commence to colour water may be withheld from the plants. It may be necessary to replunge plants intended to supply fruit during the spring and early summer. For supplying earliest fruits preference should be given to the Queens. Choose the most forward plants for the best positions, maintaining them in a uniform condition. Should the temperature rise to 80° with sun-heat, with a bottom-heat of 85°, apply slight ventilation, but in severe frosty weather a temperature of 65° to 70° will suffice. Soil intended for use in early spring potting should be protected from rain and snow; but it will be sweetened by exposure to dry frost for a time. On the morning of November 24, 22° of frost (11° Fahr.) was registered here, and within a mile radius three other thermometers registered 20° of frost in more sheltered positions.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Forcing Tarragon.—Prepare boxes by placing crocks over the holes, and cover these with some rough material, adding 2 inches of rich soil on the top. Let the quantity of roots required be taken up, and lay them rather thickly together on the surface of the soil in the box, covering them with fine soil an inch or two deep. It is most important that the soil to be used should be free from slugs, for slugs are very fond of the young growths, and if not carefully watched will eat them off as they appear. If the soil is dry afford a watering to settle it around the roots of the Tarragon, and place the boxes in an atmosphere having a temperature of 55°.

Mint.—This may be forced in a similar manner to Tarragon. If cuttings were rooted in boxes as was advised in a previous Calendar, and were afforded protection from frost, they may now be placed in an intermediate temperature, and they will provide a supply until the roots have made sufficient progress to do so.

Chives.—These are much appreciated in some places during the winter and spring months. Lift sufficient clumps and arrange them rather thickly together in pots or boxes; then place them in moderate heat, and cut the young growths when they have attained to a length of about 2 inches.

Endive, Lettuce, Cauliflowers, &c., in Frames.—It is hoped that none of the readers of this Calendar were caught napping when a change from comparative summer-like weather to that of winter came without any warning. See that the crops mentioned above are afforded ample protection during hard weather by means of mats or other material. Should the frames be in a sheltered, sunny position, it may be practicable to admit just a little air for an hour in the middle of the day, but close the frames again with sun-heat and protect them for the night.

Potatoes and other roots pitted out of-doors will also need protection. There is a tendency sometimes on the part of those covering the roots to think that they have made them secure enough, but if severe frost continues for a considerable length of time it is apt to penetrate to an unexpected degree. It is therefore best to err on the safe side, and add a little more protective material when there is any room for doubt.

Forcing of Potatoes.—Some of the early varieties, such as Sharpe's Victor, are now starting into growth, and if these are in a place from which light is excluded, have them put into boxes, keeping the buds of the tubers uppermost, and place them in full light to prevent them from being "drawn." If means are at hand for forcing and a start has not already been made, no time should be lost before making a commencement. Use no more heat than is absolutely necessary to induce growth, or the tops will become spindly and the tubers be inferior.

Globe Artichoke and Asparagus.—Have some light, loose material placed round the crowns of Globe Artichokes to protect them from severe frost. The crowns are liable to "damp" off if the material used is of a heavy nature, which will not allow of a circulation of air. Let the protection advised in a previous Calendar for Asparagus-beds be afforded at once if this has not been applied.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Phyllocactus.—During the winter, when the plants are at rest, an occasional watering will be sufficient to keep the foliage plump, which is all that is required until the plants begin to show their flower-buds in the spring. Indiscriminate watering is always harmful to these plants, and the direct result of over-watering during the winter is loss of roots and unhealthy-looking foliage. A minimum temperature of from 50° to 55° will be suitable for the next three or four months.

Richardia Elliottiana.—The foliage of the latest plants will now be dying down, and water should be entirely withheld until the bulbs commence to grow again. When the soil is dry, the pots may be laid upon their sides under the greenhouse stage; they must, however, be examined occasionally, and when they show signs of starting into growth the bulbs should be at once repotted. If it is desired to keep them dormant as long as possible, all the soil may be shaken from the bulbs, and they may then be placed in dry sand and stored in the fruit-room, where they will remain dormant until about the beginning of May, and be perfectly safe so long as the sand remains dry and the temperature does not fall much below 40°.

Gerbera Jamesoni.—This plant may be wintered safely in a cold frame if the pots be plunged to the rims in ashes, and a little extra protection afforded the frame during severe frost. The plants will need no water until the spring, when they will begin to make new leaves.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Herbaceous Borders.—In favourable weather these borders should be put in order for next season. Where there is a good width of border, say 12 feet, large clumps of various subjects can be planted for effect. If fruit-trees occupy the background of the border, place the taller varieties between the trees, and the shorter ones in front of them, so as to allow the sun to reach the fruit-trees. Sufficient space should be left around the fruit-trees to prune and clean them without treading on the plants. Dig in deeply plenty of good rotten dung on the border, so that the roots will feel the benefit, should the summer be dry. Plenty of wood-ashes should be used when the soil is at all heavy. Great care should be taken not to injure bulbs and other dormant roots present in the borders when removing other plants near them. Early and late-flowering varieties of plants should be distributed evenly about the border.

Tea Roses.—Should severe weather continue, some dry bracken should be placed among these. Cold winds generally do more harm to these plants than frost.

Bedding Begonias will now be ready for storing away. Clean the old soil from the tubers, taking care not to destroy any of the live roots. Place the tubers back in the same boxes and cover them with dry soil. They should be kept to their separate colours. The temperature of the house in which they are kept should not be allowed to drop below 45° to 50°. Examine the boxes frequently for diseased tubers.

Calceolarius.—An outside temperature below freezing point does not admit of much air being given to these plants, but advantage must be taken of the first opportunity to ventilate the structure, if only for an hour. The protective covering should not remain on too long or the plants will turn yellow. Clean over the cuttings when the weather permits.

General Work.—Leaf-raking should be done where the snow has disappeared, saving the Beech and Oak-leaves for potting purposes; others may be carted to the frame-ground for the making of hot-beds. Borders and trees should be mulched, and all dead branches cut out. Mowing-machines should be cleaned and put in repair for another season. Dahlia-stakes should be tarred at the bottom, and the tops given a coating of green paint.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will be glad to receive and to set photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DEC. 3	{ Société Française d'Horticulture de Londres meet. { German Gardeners' Club meet.
TUESDAY, DEC. 6	{ Scottish Horticultural Association meet.
WEDNESDAY, DEC. 7	{ National Chrysanthemum Society's Exhibition at the Crystal Palace (2 days).
THURSDAY, DEC. 8	{ Annual Meeting and Dinner of National Rose Society.

SALES FOR THE WEEK.

MONDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—Roses, Palms, Perennials, Begonias, Azaleas, new Fruits, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

THURSDAY NEXT—Beneficial Interest in the Leases of Top and Bottom Nurseries, Oxford Road, South Gunnersbury, with 5 Greenhouses and Heating Apparatus; also the whole of the Specimen Palms, Ferns, and other stock, on the premises, by Protheroe & Morris, at 12.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —41°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 30 (6 P.M.): Max. 49°; Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 1 (10 A.M.): Bar., 30°0; Temp., 50°. Weather dull.

PROVINCES.—Wednesday, Nov. 30 (6 P.M.): Max. 51°, West Coast of England; Min. 44°, South-east Coast of England.

Research.

It is to be hoped that we in this country are slowly awakening to the fact that mere instruction in what is already known is not the only thing required. Daily exigencies, indeed, emphasise the necessity for obeying the maxim "Find out." Practice and experience are of course imperative, but they represent only the application of knowledge previously instilled by tuition or laboriously acquired by observation. They rather benefit the individual than add to the general stock of information. The so-called "practical man" does not and cannot realise his limitations, nor gauge the extent of his ignorance. Only when he begins to study for himself and to use his brains does he find out how little he knows, how circumscribed are the conditions under which he works, and how fettered he is in his attempts to cope with them.

Agricultural and horticultural colleges like that at Reading, a prospectus of which is before us, are springing up here and there to the great satisfaction of those who like ourselves have insisted in season and out of season on the necessity for such institutions.

A happy blend of knowledge with practical experience is aimed at in these establishments. We use the word "knowledge," because many who still look with prejudice and dislike on "science" will approve of the more familiar term. It is immaterial which word be used, so long as we get the thing it connotes. But where we can count our colleges by units, other countries have them by scores. The Reports, the Bulletins, the Proceedings which reach us, especially from the United States and from Germany, are so numerous that it is quite impossible for a journal like our own to keep pace with them, or even adequately to summarise their contents. The ordinary farmer or gardener in this country can have no idea of the extent to which the central Government and the authorities of each component State in the Union help their constituents. Editors can gauge it by the vast mass of practical and scientific information which accumulates on their tables from these sources.

We do not care here to enter into a discussion of the relative merits of State aid and of private enterprise. That is a question for statesmen and philosophers to decide. We can only judge by results.

But at least there is one department in which State aid, or something equivalent to it, is undeniably requisite, and that is in the promotion of research. It is not reasonable to expect cultivators who have to make the exigencies of the moment their primary consideration to undertake studies and investigations which, however valuable they may prove in the future, are sure not to be immediately remunerative. Here then is a duty to be fulfilled by the State or by some corporation not directly interested in commercial enterprise. Research stations should be founded, students and experimenters should be encouraged, and as the education and instruction received by the practitioners extend, so will the necessity for such research be appreciated. We may thus look forward in the future to support and assistance from a class whose predecessors were too apt to mock at and undervalue the procedures of science.

As soon as the Royal Horticultural Society is freed from the debt connected with the new Hall, we may hope to see a properly equipped experimental station founded at Wisley. The Council have acknowledged its necessity, and by their utterances are more or less pledged to carry it out. We do not wish to undervalue the "trials" which will be carried out there on the same lines as formerly at Chiswick, but we do say that they are not sufficient, that they fall far short of the experimental trials which the great seed houses make for themselves, while they are valueless for scientific purposes. What we want to see carried out at Wisley is just what the cultivators cannot do for themselves.

To form an idea of the practical value of such researches and investigations as we have in view, we have but to consider the enormous losses to which growers of Potatoes, Tomatoes, Cucumbers, Vines, and various other crops are now subjected in consequence of deficient information, and the consequent empirical, rather than rational, application of remedies.

In connection with this subject, we extract from the *Athenæum* of July 30 last an

article which we commend to the thoughtful consideration of our readers:—

"One, however, in which individual or collective enterprise has not made up for our lack of Governmental support is in the provision of facilities for and the encouragement of purely scientific research—not the kind of research that at once appeals to the world at large by startling results, or enlists our ever-ready sympathies by attempting to 'benefit humanity,' but the true research that desires to increase our knowledge, and that may perhaps appeal directly only to the specialist, but is in reality a potential wealth and an actual glory to the country.

"Let us take the case of botany. England has not yet fully waked to its practical importance in forestry and horticulture, or agriculture, and its purely scientific side does not appeal to her, so that in this country, on the whole, the science fares poorly. The gardens, museums, and herbaria at Kew are of course exceptional, and do not affect the argument. Merely as an example for comparison, look at the capital of Bavaria. Here not only is the practical side of botany recognised by the provision of institutes with laboratories and experimental grounds for forestry, agriculture, and the study of plant diseases, but the "pure botanists" are housed in a splendid institute, with excellent laboratories and every convenience of apparatus and material at hand. In the research laboratory one may always find a number of foreign botanists of the most varied nationalities, many of them already university teachers in their own countries. In the capital of England no similarly equipped university institute exists, and there are few laboratories in the country where could be found a couple of foreigners at research work, attracted by the scientific fame of a great teacher. Cambridge has got a really good new institute, which was however only opened a few months ago.

"The reason that a foreign botanist who wishes to travel and do advanced work seldom thinks of coming to England must depend on many factors; but chiefly we ourselves are to blame. Not only is there a want of endowment for good laboratories, but, what is far more important, there is further a want of endowment for the professors and advanced students. Our professors seldom have sufficient time to spare from their duties for their own research work, or opportunities of travel, by which they not only could accumulate, but also spread knowledge. That so much of our scientific work is not known on the Continent is largely due to our stupid isolation. If Japan can send out (as she does) her professors and advanced students for three years at a time, not only for research, but also to note and bring back the best methods and apparatus from the chief universities of Europe and America, surely of all the millions in England a small portion might be wisely used in keeping one of the most valuable sciences up to date and for upholding our prestige among the nations. England does not lack men, but the men lack opportunity, and England's scientific fame suffers in consequence. These deficiencies are well known of course to the man of science, but they ought to be exhibited to the public till that tardy but in the end sensible body sees that something ought to be done, and insists on its being done."

In order to afford some corroboration of our remarks, we extract the following particulars from the Year-book of the Department for Agriculture for the United States.

The work of that Department is distributed over the following sections:—Weather Bureau, Bureau of Animal Industry, Bureau of Plant Industry, Bureau of Forestry, Bureau of Chemistry, Bureau of Soils, Bureau of Entomology, Division of Biolo-

gical Survey, Division of Accounts, Division of Publications, Bureau of Statistics, Library, Office of Experimental Stations, and Office of Public Road Enquiries.

There are 66 Agricultural Colleges, 4,359 professors and teachers, and 52,489 students. With few exceptions, each of the Colleges offers free tuition to residents of the State in which it is located, and opportunities are offered for the students to earn some part of their expenses by their own labour.

The outlay for the year is estimated as follows:—Botanical Investigations, 65,000-00 dollars; Vegetable Pathology, 130,000-00 dollars, exclusive of salaries; Pomological Investigations, 37,000-00 dollars; Forestry, 312,860-00 dollars; Experimental Gardens, 25,000-00 dollars; Soil Investigations, 170,000-00 dollars; Grass and Forage Plant Investigations, 35,000-00 dollars; Experimental Stations, 90,000-00 dollars; Publications, 200,000-00 dollars; Foreign Market Investigations, 7,500-00 dollars; making a grand total of 4,179,640-00 dollars, exclusive of the expenses connected with the Weather Bureau.

A glance at these figures will show at what a really fearful disadvantage our cultivators labour in this country, even when due allowance is made for the larger area and the more numerous population.

NATIONAL ROSE SOCIETY.—The twenty-eighth annual general meeting will take place at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Thursday, December 8, at 3.30 P.M. A proposal to make alterations of the by-laws, &c., is to be considered at the above meeting. The annual dinner will take place at 5.30 P.M. on the same day, at the Hotel Windsor. Mr. C. E. SHEA will preside.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Bristol and Bath Auxiliary has been very successful in collecting funds in the past, and hopes to excel previous efforts next year. As a means to this end it is proposed to hold a Rose exhibition early in July next. The Committee and friends have guaranteed £100 towards the expenses, and we urge all who can to help the Committee to make the show a success. There will be no money prizes, therefore the sympathies of exhibitors must be enlisted if a good show is to be made. All who can help by sending subscriptions, or by taking some practical interest in the show, should communicate with Mr. W. A. GARAWAY (Chairman) or Mr. W. E. GROVES (Secretary), 34, Elliston Road, Redland, Bristol.

THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord Onslow to enquire into and report upon the fruit industry of Great Britain held sittings on the 24th and 25th ult. Evidence was taken from the following witnesses:—Mr. J. F. LEAF, representing the Elementary Education branch of the Board of Education; Mr. FREDERICK KEEBLE, Principal of the Horticultural Department of the University College, Reading; Mr. A. BUCK, representing the Surveyors' Institute, and Mr. VINCENT HILL, General Manager of the South Eastern and Chatham Railway, representing the Railway Clearance House.

THE TAXATION OF WOODLANDS.—We are informed that a paper on the above subject will be read by Mr. LESLIE S. WOOD, F.S.I., at the Country Club, 12, St. James's Square, London, on Thursday, December 8, at 4.30 P.M. Cards of invitation may be obtained on application to the Secretary.

PINEAPPLE-GALL OF THE SPRUCE.—At a recent meeting of the Cambridge Philosophical Society Mr. E. R. BURDON read a note on the

early stages of the Pineapple-gall of the Spruce. According to a summary of his opinions published in a recent issue of *Nature*, "the galls are caused by certain aphide belonging to the genus *Chermes*. The insect drives its proboscis into the bud, and sets up an irritation which results in the young shoot becoming modified into a gall. The early stages of the gall take place whilst the shoot is still enclosed in the winter bud scales. The cells are forced into precocious growth, and a parenchymatous tissue, consisting of swollen cells with vacuolated protoplasm and enlarged nuclei is formed. The chlorophyll, tannin, resin-canals, and secretory-cells all disappear, but an abundant supply of starch is laid down which may possibly arise as the ultimate product of the disintegration of the tannin. The chromatin network of the nuclei becomes aggregated into wart-like nucleoli. The mitotic figures appear to be of the usual somatic type, and no indication of heterotypical mitoses has yet been found. There is reason for believing that the ultimate cause is an injection by the insect, and that this injection will cause a gall-growth only when it acts on embryonic tissues which are not confined by other lignified or cuticularised tissues."

THE CRÉPIN MEMORIAL.—We understand that a bust of the late Director of the Botanic Garden, Brussels, will be inaugurated in the Botanic Garden on Sunday, December 4, at 11 A.M., when the Count DE KERCHOVE DE DENTERGHEM will deliver an address.

DR. G. V. POORE.—Dr. GEORGE VIVIAN POORE, consulting physician to University College Hospital, died at Andover on the 23rd ult. In England, apart from his important work at his hospital, he became widely known as an authority upon sanitary matters, and by his strenuous condemnation of all systems of sewerage which carried away from the soil matters capable of enriching it. His views on this subject were reduced to practice on his property at Andover, and were made the subject of various books, some of which contained illustrations clearly showing the advantages of his system of utilising house refuse of all kinds. For the last year or more it had been manifest to his friend that his health was failing, and his first serious illness was attributed to his having eaten sewage-fed oysters.

INDEX KEWENSIS: SUPPLEMENTUM I.—We learn that the printing of this first Supplement has advanced as far as the letter V. A serious affection of the eyes compels M. DURAND to work with great difficulty, and is responsible for the slow progress that is being made. Great sympathy is felt for M. DURAND in his affliction. This first Supplement is intended, as we have said, to bring the work down to the end of 1895, and is not to be confounded with the second Supplement, dealing with the botanical names from 1896—1900, now in progress at Kew, and of which the first part has recently appeared.

TWENTY-FIFTH ANNIVERSARY OF THE FOUNDATION OF THE BELGIAN CHAMBRE SYNDICALE.—The *Chambre Syndicale des Horticulteurs Belges* (Ghent) has decided to celebrate the twenty-fifth anniversary of its foundation. Particulars of the programme, which is to be prepared for February, 1905, have not yet been fully arranged, but with our knowledge of the Society and of the officers and members composing it, we are assured that much gratification will be felt by all who participate on the auspicious occasion.

SOCIETY FOR HORTICULTURAL SCIENCE.—We are informed that the Society for Horticultural Science, Geneva, N.Y., will meet in Philadelphia, some time during the week beginning December 28. The sessions of the Society will probably be held on December 28 and 29, but are not yet planned in detail.

"FLORA OF TROPICAL AFRICA."—The fourth and concluding part of the fourth volume has just been issued under the editorship of Sir WILLIAM T. THISELTON-DYER. It contains the remainder of the *Gentianaceae* elaborated by Messrs. BAKER and BROWN, and more than fifty pages of supplementary matter, together with a copious index. Those who think there are but few new species still to be discovered, and that systematic botany is "played out," will have to revise their opinions in the face of the vast numbers of hitherto undescribed species published in these volumes. They are issued by Messrs. LOVELL REEVE & Co.

DUBLIN SEED AND NURSERY EMPLOYEES' ASSOCIATION.—We have received the first Annual Report of this Society, and are pleased to record that its progress has exceeded the highest expectations of its Committee.

CROWN GALL (see p. 371).—Dr. COOKE calls our attention to the following paragraphs on this subject:—"While many causes have been assigned for the formation of the galls characteristic of this disease, the true one has been found to exist in the presence of an organism belonging to the myxomycetes or slime moulds. This matter has been determined by Towney in Arizona, who used Almond seedlings infected with the disease for investigation. In its early stages the parasite consists of colourless microscopic masses of protoplasm which inhabit the cells of the knot. Under certain conditions these protoplasmic masses unite, and come to the surface of the galls, where small, rounded, spore-producing bodies are formed. The disease is spread most rapidly by means of infested nursery stock. There is evidence also that the disease may spread through the soil for limited distances, and its contagious nature is clearly established." *Michigan Experiment Station, Bulletin No. 25, March, 1904, p. 26.*

—"Crown gall is found on a variety of plants, including Almond, Apple, Apricot, Blackberry, Cherry, Chestnut, English Walnut, Grape, Peach, Pear, Plum, Poplar, and Raspberry." *Wendell Paddock, in Bulletin 86, U.S. Experiment Station, Colorado, December, 1903.*

SUCCESSFUL GARDENING.—Mr. JOSEPH PEAPLE, who is in the employ of E. A. HAMBRÖ, Esq., devotes most of his spare time to his cottage garden, and has achieved a remarkable record. By his own unaided efforts he has during the past five years, at the Hayes and District Cottage Gardeners' Association's show, won 49 first prizes, 37 seconds, and 25 thirds, for fruit and vegetables, and also obtained each year the Royal Society's Bronze Medal for the highest number of points gained. A special Silver Medal of the Royal Horticultural Society has recently also been awarded to this amateur.

SIR JAMES PAGET (1814—1899).—The following note relating to this eminent surgeon and most amiable man is taken from the *Journal of Botany*, October, 1904, p. 298:—"I think it impossible to estimate too highly the influence of the study of botany on the course of my life. It introduced me into the society of studious and observant men, it gave me an ambition for success, or at the worst some opportunities for display in subjects that were socially harmless; it encouraged the habit of observing, of really looking at things, and learning the value of exact descriptions; it educated me in habits of orderly arrangement. I can think of none among the reasons of my success—so far as I can judge of them—which may not be thought of as due in some degree to this part of my apprentice-life. My early associations with scientific men; my readiness to work patiently in museums and arrange them, and make catalogues; the unfelt power of observing and of recording facts—these and many more helps towards happiness and

success may justly be ascribed to the pursuit of botany. And as I look back I am amused in thinking that of the mere knowledge gained in the study—the knowledge of the appearances and names and botanical arrangement of plants—none had in my after-life any measure of what is called practical utility. The knowledge was useless; the discipline of acquiring it was beyond all price."

SCIENTIFIC TREE-BUTT BLASTING.—Stately and well-grown timber adds much to the grandeur of an estate, but nothing looks more untidy than a lot of old tree-butts lying about, which often prove dangerous to horsemen and cattle. The primitive method of removing tree-butts by grubbing, wedging, stocking, and burying was tedious and expensive, the latter extravagant when fire-wood is taken into account. The new system of blasting butts by the aid of electricity and "gelignite" (a safety explosive) appears, however, to be an efficient way of getting rid of these troublesome encumbrances. We are informed that some very successful experiments in blasting tree-butts have recently been carried out on Lord Leigh's Stoneleigh Abbey estate, near Kenilworth. The butts comprised Elm, Ash, Alder, and Oak, some of the latter (with earth attached) being estimated to weigh 10 tons. Mr. Thos. Johnson, of Kate's Hill, Dudley, attended to conduct the experiments. The last two butts to be taken in hand were Elms of immense size, lying close to the river in the park. A hole 1½ inch in diameter was bored with a Gilpin auger in each of the butts. These having been charged up with "gelignite," an electrical detonator was inserted and attached to the main cable of the battery. All being ready the operator retired some 50 yards away behind a huge Oak-tree, gave the handle of the battery a few turns, when the monster butt was blown into suitable pieces for loading up. The work was done under the guidance of Mr. A. Wilrose (head forester), and regarded as most successfully and expeditiously carried out.

JUBILEE OF MR. BEGG.—Mr. JAMES BEGG having lately completed his fiftieth year as gardener to Sir ROBERT JARDINE, Bart., at Laurick Castle, substantial recognition of his long career has been made by a number of the men who have served under him. In the hands of Mr. A. DEWAR, Dalkeith; Mr. J. TROUP, Castlemilk; Mr. W. McCLEAN, Balgray, the project made such progress that they were able to present Mr. BEGG with a valuable gold watch and chain; while Miss BEGG, almost as much respected and esteemed by the workmen as Mr. BEGG, became the recipient of a gold brooch. So many men have learned their art, or improved upon their earlier training, under his kindly eye, that he is known and held up as a pattern of his class throughout the length and breadth of Scotland.

"AMERICAN GARDENING."—It is with much regret that we hear of the discontinuance of *American Gardening*, a weekly journal published in New York, and of which our old colleague, Mr. LEONARD BARRON, has been Editor for some years past.

PLATFORM GARDENS.—The practice of the Midland Railway Company of offering prizes, amounting in the aggregate to £300 per annum, to the station-masters throughout their system for the best-kept platform gardens is, there can be no doubt, greatly appreciated by the travelling public. The officials dealing with the awarding of the prizes make due allowance for the varying conditions under which the gardening operations are conducted, such as the nature of the climate and soil, and also the opportunities at the disposal of the men concerned. This year Eckington, on the Birmingham and Bristol section, has secured the highest award. For the 2nd place

three stations are bracketed together, namely, Matlock Bath, Five Ways, and Malvern Wells; and Belper and Cardington are equal for the 3rd position. "*The Leicester Post*."

THE SHOW AT EDINBURGH.—The recent exhibition of *Chrysanthemums*, fruit, &c., under the auspices of the Scottish Horticultural Association has been acclaimed on all hands to be one of the very best autumn shows ever held in that city. We hope the International Show to be held in Edinburgh in September next will be proportionately successful. It is reported that the indications at present are distinctly favourable. Our reporter in last week's issue made a slip in stating that the new class for hardy fruits was won by Mr. BARNES, for we are informed that the 1st prize was really awarded to Mr. F. JORDAN, Impney Hall Gardens, Droitwich.

FOUQUIERA COLUMNARIS.—This extraordinary plant will not attract the general visitor to Kew, but those on the look out for curiosities and plants of special interest, such as cannot be seen elsewhere out of a botanic garden, should seek it out in the centre of the long Succulent-house.

THE ARBOR DAY CELEBRATION which was so successfully carried out at Eynsford, in Kent, on Saturday last (Nov. 26) was a repetition, but on a larger scale, of other celebrations there, the first of which occurred in the Victorian Diamond Jubilee of 1897, when shade trees on the School Bank, and an orchard of cider Apple-trees were planted by Sir GEORGE BIRDWOOD, K.C.I.E., M.D., and Mr. C. W. RADCLIFFE COOKE, then M.P. for Hereford. The crop has been annually and steadily increasing, until, in the present season, nearly two hogsheads of cider have been made at the Eynsford factory from the fruit of this Jubilee Arbor orchard. Shade trees were also planted in the village centre to commemorate the successful defence of Kimberley, Ladysmith, and Mafeking. An appreciatory letter was subsequently received from the late Right Hon. CECIL RHODES, dated from Salisbury, Rhodesia, June 11, 1900, which is now in the village museum. In 1902 a row of shade trees was planted on the western side of the main road, in memory of our late beloved QUEEN. A Sycamore tree was planted in the village centre and the triangle turfed in the present year.

Arbor Day is essentially an American institution, originated by a settler, the late JOHN STIRLING MORTON, in 1872. Deploping the treeless condition of Nebraska, he obtained a State decree for the observance of one day in the year for tree-planting, and to further his object he secured the co-operation of the State schools. Nebraska alone not only now boasts of more than a thousand million trees planted in that State through the agency of Arbor Day, but the institution has spread to every State in the Union, as well as to Canada, Australia, New Zealand, the Cape, Sweden, Spain, and Italy. The movement in England has been greatly assisted by the Royal Society for Protection of Birds, whose chairman, Mr. MONTAGU SHARPE, D.L., C.A., was so impressed with what he saw of the utility and educational value of Arbor custom during a visit to the United States that he invited competitive prize essays on the best method for establishing an Arbor Day throughout the British Isles. In 1901 the Society organised a prize competition among the elementary schools of Yorkshire and Berkshire. Two fresh counties annually have the opportunity of competing, until eventually every elementary rural school in the kingdom will be reached by this scheme. In this connection it is extremely interesting to observe that a Japanese Society in Tokio, before inaugurating an elementary school competition on the humane treatment of animals, consulted the Bird Society in order to formulate their system

on the lines of our English Arbor competition—another example this of the earnest purpose and thoroughness of our gallant allies. Recently the Irish Forestry Association have reprinted an Arbor article from *Pearson's Magazine* of last February, and have circulated it throughout Ireland, with an earnest appeal to Irish public authorities to establish an Arbor Day there. It is not claimed for Arbor custom that it can ever take the place of Forestry, but it is nevertheless its handmaiden. Afforestation on comprehensive lines is the dire need of Great Britain, and still more so of Ireland. By interesting all classes in tree-planting, a general desire for afforestation is being fostered, and eventually this will lead to the adoption of a national scheme for systematic planting on a large scale.

On Saturday last the proceedings commenced with a short service in the Parish Church of St. Martin, and an address from the Vicar, Rev. C. H. SIMPKINSON. With the kind consent of Sir W. M. HART DYKE, Bart., M.P., the owner of the land, a quarter of a mile of shade trees was planted on the western side of the main road from the railway station to the village, and the existing hedge grubbed in order to create a path to the station under the trees. A general planting of trees, Acorns, Apple, and other fruit-trees, and ornamental shrubs, Ivy on houses, &c., followed. There was a procession of school children, headed by the Eynsford company of the Boys' Brigade and the village Brass Band. Luncheon was served in the Artists' Room of the Eynsford Castle Hotel, and a public meeting in the Council School was held, when Arbor custom and afforestation were advocated by Sir JOHN COCKBURN, Mr. DUNSTAN (Principal of Wye College), Mr. PERCY WATERER, Miss WILKINSON (Principal of the Horticultural College, Swanley), and Mr. HY. CANNELL, as well as by Mr. E. D. TILL, to whom the success of the Eynsford proceedings is pre-eminently due. Sir JOHN COCKBURN was the successful inaugurator of Arbor Day in South Australia. A bonfire at 8 P.M. was lit by the school children.

ELECTRICITY IN AGRICULTURE AND HORTICULTURE.—We are informed that we were mistaken in supposing Professor LEMSTRÖM's work on this subject to have been translated from the Swedish. It was written by the Professor in English, and was revised by Professor GREIG, of Aberdeen, and Mr. TUCKER.

PUBLICATION RECEIVED.—*The Farmer's Labour Account Book* is useful for recording wages, stock, and other accounts. Published by Messrs. Jarrold & Sons, Ltd., Norwich, price 3s. 6d.

MARKET NOTES.

MARKET CHRYSANTHEMUMS.

POT PLANTS.—Trade in Covent Garden market has been in a depressed condition all through the season, and among *Chrysanthemums* only the best of either plants or flowers have been in request, the bulk of inferior ones being extremely difficult to dispose of, even at low prices. Among those growers who have been able to maintain a moderately good trade is Mr. H. BILLINGHURST, Park Nursery, Selhurst, Croydon.

Calling on him at the end of October, I found him very busy, every house filled with plants, though the number was getting reduced. Other houses were being filled with lifted plants for obtaining cut flowers. The area of the nursery comprised some 2 acres, quite half of this being taken up with the planting-out grounds on which the pot plants are stood. Some 3,000 pot plants of the early Midle Massee type had been already sold. The pots used for market purposes are 48's and 40's.

The cuttings are rooted in the usual season, planted out in the spring, lifted, and potted early

to avoid checking the bud-growth. Dwarf-grown plants are desired, in order to obtain which the single stems are topped, these afterwards making three breaks, and the latter, when again stopped, each developing three growths, give each plant a head of from nine to twelve growths, each bearing a flower-bud. Varieties in season with the Middle Massee type were Lady Fitzwygram and Mme. Desgranges. The varieties marketed in October are Soleil d'Octobre, and its bronze sport, Phoebus, white and pink Ivory, and William Holmes. The last-named is very tall in growth. Caprice du Printemps is one of the best varieties and remains unequalled. For a companion, the new sport, Kathleen Thompson, has been secured, the colour being just that which is in demand. The

MR. CHAMBERLAIN'S GARDEN.

[SEE SUPPLEMENTARY ILLUSTRATION.]

(Continued from p. 382.)

THE Supplementary Illustration enclosed in the present issue affords a view of the dwelling-house at Highbury, from the south-eastern portion of the pleasure grounds, and shows the path leading past Rhododendrons and entering a rock-garden.

If we leave the grounds and look into the plant and fruit-houses, it will be seen that although there are good collections of other species of plants, Orchids are given the first place. The collection has been described so many times in these pages that readers of the *Gardeners' Chronicle* know

the species that give considerable trouble in most collections; at Highbury there are nearly one hundred plants, and their appearance is indicative of excellent culture. The collection is under the immediate care of Mr. McKay, who had charge, until three and a half years ago, of the Orchids at the Royal Gardens, Kew. Cattleyas are grown very well, and the choicest Cattleya hybrids and Lælio-Cattleyas are added to the collection from time to time. It is singular that *C. x Chamberlainiana*, a hybrid from *C. guttata* and *C. Dowiana*, though it has been cultivated at Highbury for twenty years, has not flowered there yet! Although Cypripediums are not present in large numbers, a species that is not one of the easiest to grow



FIG 170.—GROUP OF HIPPEASTRUMS AS GROWN IN MR. CHAMBERLAIN'S GARDEN AT HIGHBURY.

list of varieties is not a lengthy one, but the plants are realising from 12s. to 24s. per dozen.

CUT BLOOMS.

In this department Mr. H. Billingham has experienced some difficulty, prices being low and produce difficult to sell. Fine blooms of Soleil d'Octobre on long stems have realised 2s. per dozen, but many, such as W. Holmes, sold for 8d. per dozen. The main crop of bunching varieties had yet to be harvested. For this purpose Source d'Or, and the yellow sport Lizzie Adcock, Klondyke, Cullingfordi, Mrs. J. Thomson, &c., are grown. A still later batch for cutting consists of the varieties Falbe, Niveum, and Madame Bergman, while for the latest cutting batches of all, W. H. Lincoln and L. Canning are grown, the two last-named being grown in 16-inch pots without being stopped. The crops in the house as I saw them represented for the most part the third successive crop. Owing to the open season the last flowering batches are only now being laid in. *Stephen Castle, November 7, 1904.*

of its great value, and on the present occasion we do not propose to do more than remark upon a few observations we made when we were last at Highbury. All the popular genera appeared to be well represented, but of Cypripediums there are fewer plants than of Odontoglossums, Dendrobiums, Cattleyas, Lælias, Phalanopsis, and bigeneric and specific hybrids from these. The showy species are given more encouragement than those chiefly remarkable for their curious flowers, as Pleurothallis, Restrepia, &c. *Coelogyne cristata*, for instance, which is one of the most floriferous Orchids, and one of which the flowers have a high decorative value, is represented by several specimens in great pans, each of which has a circumference of something like 12 feet. It is an indication of the successful culture of this species that these specimens generally produce about 500 spikes of flowers, and the Chatsworth variety bears as many as six flowers on a spike. In no collection could *Coelogyne* appear in better condition. Of a very different type are the Phalanopsis, for they are among

succeeds grandly. We refer to *C. niveum*, which furnishes a pan at least 1 foot in diameter, and grows and flowers as freely as could be wished. Like all Orchid specialists Mr. Chamberlain is not content merely to cultivate Orchids, but he spends considerable time and takes personal interest in raising seedlings from selected crossings. Some very valuable hybrids have thus been raised at Highbury.

Most of the plant-houses are span-roofed structures that open at one end into a long corridor, which by means of a Fernery is connected with the drawing-room, thus enabling a tour to be made through them without the visitor having to go into the open air. One of these houses, until six months ago, contained a central bed of greenhouse Rhododendrons, with a path around it. The bed, about 18 inches deep, was sunk a little below the ground level and was composed of sandstone and peat. The plants grew well under these conditions, but failed to flower so freely as when cultivated in pots, and they have therefore been lifted and are now in pots. The

collection includes upwards of two dozen of the very best varieties, many of which were raised or introduced by Messrs. Jas. Veitch & Sons, Ltd.

Another feature at Highbury are the Hippeastrums, of which a very large number is grown. Mr. Chamberlain, like Captain Holford and others, has raised numerous seedlings of these showy bulbous plants from crosses selected by himself, and in the illustration shown at fig. 170 is a group of plants in flower, some of which are Highbury seedlings. With such a collection as that of Mr. Chamberlain's, it is possible to have plants in flower from November until the commencement of summer. Carnations are cultivated largely, and varieties of the *Souvenir de la Malmaison* type, as well as others, are treated with gratifying success.

Other species of plants of which large batches are cultivated include *Begonia Gloire de Séfaut*, *B. Gloire de Lorraine* and its varieties, *Roses* (for which two houses are reserved), *Cinerarias*, *Mignonette*, *Boronia megastigma*, and other sweet-scented flowers; *Richardias*, *Caladiums*, *Eucharis*, *Pancratiums*, *Clivias*, zonal and decorative *Pelargoniums*, *Streptocarpus*, *Ixoras*, &c., in addition to fine foliage plants, Ferns, imported bulbs, &c.

There is also a good kitchen garden, and a few houses for the cultivation of fruits and for forcing vegetables. Mrs. Chamberlain and other members of the family exhibit much interest in all that pertains to the garden, and Mr. Neville Chamberlain's interest is also manifest in his enthusiasm for the maintenance of the Botanical Gardens at Edgbaston, for he is the respected treasurer of the Birmingham Botanical and Horticultural Society. P.

PALÆOZOIC CONES AND SEEDS.

Mr. H. SPENCER sends us the following notes of the interesting collection of models of palæozoic cones and seeds exhibited by Mr. H. E. H. Smedley, F.L.S., F.G.S., at the Linnean Society, on November 16. These have an interest beyond the immediate circle of palæobotanists, carrying us back, as they do, to the germination and fructification of seeds to an age to which we seldom pursue our botanical studies.

Professor Oliver and Dr. Scott, as well as other palæobotanists, have for a long time been instructing us on the character and formation of seeds, of which there are only fossil remains from which to build up the superstructure, and it is from these fossil remains, guided mainly by such authorities, that Mr. Smedley has succeeded in constructing about fifty models of seeds and cones of the carboniferous period.

In his description of the exhibits the author was able to demonstrate the connection between the cryptogams [or spore-bearing plants and the gymnospermous seeds of the carboniferous period. The highly-complicated structure of these seeds, and their variation in character and detail suggest to Mr. Smedley that they not only existed in great abundance, but that their genera and species must also be numerous. He was even able to trace distinct evidence of a transition from one type to another. Among the collection was a group of models of sporophylls having a *Selaginella*-like cone forming megaspores in a sporangium, three of which apparently become abortive and shrivel up, while a fourth develops a seed-like structure. The identification of the *Lyginodendron* with the fossil-seed *Lagenostoma* was made, thus forming a link between the Fern and the Gymnosperms. The construction of this seed in sections enabled the demonstrator to show its varied and beautiful organism, consisting of a pollen chamber, wall, plug of tissue, arising from the nucellus, with pollen grains attached. Another specimen showing the seed in

an earlier stage of development covered with sessile and stalked glands was shown as a further evidence of the identification.

In the discussion which ensued, Mr. Smedley was highly complimented on having produced such an array of models of palæozoic seeds. Dr. Scott, who had closely examined them, declared that they were artistic and accurate representations of the fructification of the fossil-seeds, and would be exceedingly useful for demonstration and teaching purposes.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

CYPELLA HERBERTI. — This pretty little Buenos Ayrean Irid may with me claim to have been the most satisfactory flower of the year in the garden. Its first blossom opened on the last day of June, and the last withered on October 24. Not a single day since the commencement of its flowering, a period of nearly four months, has it been without expanded blooms, sometimes twenty or thirty, sometimes but a bare half-dozen. As is the case with its relatives the *Tigridias*, the blossoms only retain their beauty for a day, but they are produced in such rapid succession that their speedy decease is unremarked. How many hundreds of flowers my dozen or so bulbs have produced this year I have no idea, but the number has probably exceeded a thousand. The three-petalled, apricot-yellow blossoms, with the narrow black band bisecting each petal, and the beautifully modelled centre, are quite charming; and the knowledge that every day there would be fresh flowers to admire gave the plants an increased value. They made particularly vigorous growth, their flower-stems just exceeding 3 feet in height. They are growing in a narrow, raised border facing south-west and backed by a wall, and have for companions *Bessera elegans*, *Milla biflora*, *Nerine Fothergilli* major, *Bravoa geminiflora*, *Chlidanthus fragrans*, and *Herbertia pulchella*. The soil is a mixture of peat, leaf-mould, a little loam, and a large proportion of coarse grit. *S. W. Fitzherbert, South Devon.*

ASSESSMENT OF GLASSHOUSES IN MARKET NURSERY.—Respecting the paragraph on p. 380, may I ask what is the usual rate of assessment of glasshouses? I have just over 700 feet run averaging 13 feet wide, and I am assessed at £40 to the rates thereon. Assessments are rising almost everywhere. *T. N.*

NATURAL HISTORY OBSERVATIONS.—I would thank some of your many readers to explain how a spider manages to place a line of web 15 feet in length across a path from one branch to another branch opposite and nearly level, a task which seems most difficult to accomplish. I find lots of spiders the size of *Hazel Nuts* in my garden; they cunningly form a web over a good fat bunch of Blackberries, where they do tremendous slaughter, so I suppose gardeners must call them friends. —I have observed curious growths of Artichokes this season; the ground being dry and hard; the tubers are in bunches close together like *Hazel Nuts*, some of the tubers being perfectly flattened in cases where they have got into the cracks of the hard ground. Last year the ground was moister, and the tubers were found 6 to 15 inches away from the parent stem.—I lately opened an iron safe which had been closed for eight months, and found the remains of an old Potato with shoots 8 inches in length bearing six young Potatoes of the size of Peas. There was a kind of leafy bud at the end of each Potato.—In order to perpetuate the species, Nature resorts to various methods. I have observed that if a climbing plant is cut down when the season is waning, the plant does not wait to climb, but flowers and fruits near the ground in order to save time. A Hop-plant stripped leafless by blight developed a few buds, but no leaves; these expanded as blossoms, but did not manage to reach the fruiting stage. The plant tried hard, but the season was too late. I grew a quantity of green Wheat in a tub, and watered

it on the earth, not wetting the foliage, which was 6 inches high; before I could move to the next plant there were beads of water on the top of each spike of green Wheat. How quickly Nature renovates herself! *Amateur.*

JAPANESE LARCH AND DISEASE.—It is stated in the last issue of the *Gardeners' Chronicle* that the Japanese Larch "is not immune from canker," according to the *Journal* of the Board of Agriculture. May I ask where the tree has ever been attacked by the Larch-blister? I have invited information on that head frequently, and wrote privately once to a teacher of forestry at a University, who had put the statement in print, and was surprised by his reply, asking for chapter and verse where he had ever said such a thing. I sent the information required, requesting particulars, but never got them. He had apparently forgotten what he had written, and had no case to show. In another instance an equally important authority has said the Japanese Larch was not immune, but the diseased subjects and their whereabouts are still to find. I know this last authority visited a supposed diseased Japanese in a diseased wood of common Larch, with the head forester, and both pronounced it "a case"; but when I presented myself in the neighbourhood to see the tree I was told by the same forester that they had both been mistaken. I rather suspect that this was one of the non-immune cases put about, if not the only one. *J. Simpson.*

THE BEST APPLES.—I have perused the recent correspondence with considerable interest, having a limited garden-space, and being anxious to get the best Apples I can procure to fill that space. The experience of others given in your columns makes one long for more. Mr. J. Page (p. 333) speaks of the "sweetest Apple I know" as being named "Honey," but I have looked in vain in three catalogues of large fruit-tree growers, and find it not! Nor can I find *Pineapple Russet* in the catalogues of growers; we are not told, also, whether it is a free-bearer, nor whether the fruits are soft. Perhaps if I give my own experience on a greensand soil, in a somewhat dry garden, it may be useful to some of your readers. As a cooking Apple, I have found *Wellington* (or *Dumelow's Seedling*) a good and regular bearer, an excellent keeper, and a good cooking Apple, giving a white, pleasantly acid pulp when cooked. *Cox's Orange Pippin* I find a good and regular bearer, of fine flavour both raw and cooked, and if not quite so soft as one could wish, it is soft enough to bite with artificial teeth. *Worcester Pearmain* is a good bearer, and the fruits have good colour, but is not a soft Apple, and does not cook well nor is it of a good colour. *Lady Sudeley* is a very pretty and soft Apple, and a good bearer, but a week after it is taken from the tree it is insipid, and it has not enough acidity to make it pleasant eating. *Gravenstein* is a delicious eating Apple, soft, white-fleshed, fine-flavoured, but with such a powerful odour of Quince that it needs storing in close tin tins; but as to its bearing capabilities I can say nothing. I bought a pyramid tree three years ago; it is a fine tree now, but, although it has flowered, I have not had a single fruit as yet. *Allen's Everlasting* is a good bearer, but the fruit, unless severely thinned, is not bigger than a Crab-Apple, but for a very late eating Apple is fairly soft and good-flavoured. I quite agree with your correspondent, E. H. Jenkins, that *Lane's Prince Albert* gives a dirty brown pulp when cooked; it is far inferior as a cooking Apple to *Wellington* or *Lord Suffield* or the *Yorkshire Greening*. *Bismarck*, I know, is a most prolific bearer, and has a fine colour, and is of fairly good size; and if, as Mr. Jenkins states, it gives a white pulp of good flavour when cooked, it should form a very popular cooking Apple. But one would like to know a little more about eating Apples. Can any correspondent point out the bad as well as the good qualities of the following varieties:—*Irish Peach*, *Beauty of Kent*, *American Mother*, *Wyken Pippin*, *Roundway's Magnum Bonum*, *Ringer*, *September Beauty*, and *Lord Burghley*? Also are the fine-coloured, good-flavoured American Apples, *Ben Davis*, *Baldwin*, *Northern Spy*, *King of Tompkin's County*, poor bearers in this country? or why do we import them in such large quantities? It seems

strange that hundreds and thousands of barrels of fine-coloured and good-flavoured Apples should bear carriage all the way from America, and yet are not produced in a fresher and riper condition in this country. There is little doubt that it is necessary to gather and pack them before they are quite ripe so as to enable them to bear the sea passage; but in this country they could be allowed to develop their full flavour before gathering. Probably exhibits of the best imported fruits, if allowed, would do much to convince Apple-growers in this country that we have much to learn as to good sorts from Tasmania, Nova Scotia, Canada, and the United States. *A. N. Adamson.* [There is to be such an exhibition at the Royal Horticultural Hall on Tuesday and Wednesday, Dec. 13 and 14. *Ed.*]

THE BRITISH GARDENERS' ASSOCIATION.—Gardeners of the British Isles have at the present time an excellent opportunity for proving both their common sense and the mutual benefits arising from combination or co-operation. Life-long work in gardens, a wide acquaintance with gardeners, and an earnest desire for the upraising of a useful class of men, have rendered me only too familiar with the difficulties, the disadvantages, and the frequently inadequate compensation which impede their progress. The desire has often been expressed to improve the condition of gardeners, and some well-meaning attempts have been made to do so, without much success. Never in my experience has a more admirably-designed society been brought within the reach of the men it is intended to benefit than the one indicated at the head of this note. I have had the rules and studied them closely, with the result that I feel convinced would follow if others would do the same—namely, I have sent to Mr. W. Watson for a form of application for membership. It has been said that some head gardeners in good posts decline to join because the Society cannot benefit them. This seems hardly credible, for there are few narrow-minded gardeners, and fewer still who are so devoid of humanity that they are unwilling to help members of the brotherhood who have been less fortunate than themselves. But it shows also a lack of appreciation of their own position, for how many are there who can be certain that a few months hence they may not need the help which they decline to render to others? Isolated as they are, gardeners have been hitherto unable to strengthen their position as they should do; now the chance has come, and all who have a real concern in the best interests of the craft would do well to recognize it. Rumour has it that some employers might object to the Association, and obviously there may be a few unreasonable masters as there are also some unreasonable gardeners. But is possible to prove to employers that it is to their interest to have the best men procurable, even though they have to pay a few shillings extra a week to save the loss of pounds in other directions through incompetence at a low wage. Nurserymen it is said are doubtful about the Association, but if that is meant for an argument against it the logic is defective. It is not to the interest of nurserymen to see incompetent men in situations of any kind; the best cultivators are the tradesmen's best friends. Look, too, into the leading nurseries and see how many of the worthless and inexperienced are tolerated there in important posts. When the Association is firmly established, as it assuredly will be, nurserymen will soon lose whatever prejudice they have imbibed through misrepresentation, or an erroneous conception of the objects. The main intention, as I understand it, is to afford encouragement and help to able men. What better object could there be? *Northumbrian.*

THE LATE MR. LEO GRINDON.—I trust you will allow me space to refer to my old friend and correspondent, Mr. L. H. Grindon, for the purpose of making mention of his instructive and interesting book on *Fruits and Fruit-Trees*, which contains a great amount of information of a delightful character, interspersed with many useful cultural notes. One of the great charms of the man was his readiness to impart information, and teaching was, with him, a passion. On

Saturday and Sundays he would take botanical classes into the country and expatiate on the many plants and natural objects met with. There are some living who have pleasant recollections of the palmy days of the Manchester Botanical and Horticultural Society's Whitsuntide Show, when Mr. Grindon reported the proceedings for the *Manchester Guardian*, and responded in his cheery, optimistic manner to the toast of the Press at the judges' luncheon. The *Manchester Weekly Times* of November 25 contains among the list of deaths this simple and touching announcement: "Beloved Leo Grindon, on Sunday evening last, in his 87th year." He was, indeed, a man much beloved by those with whom he came in contact. *R. Dean.*

THE PARENTS OF CRINUM POWELLI.—In your issue of November 19, Mr. Charles Sprenger, of Naples, writes with regard to the parentage of *Crinum Powellii*. He says there is no doubt that *C. Powellii* is the offspring of *C. longifolium* and *C. pedunculatum*, and not of *C. longifolium* and *C. Moorei*. Mr. F. W. Moore has in his possession Mr. Powell's letter of more than twenty years ago, in which he says that he crossed *C. capense* (*Amarylhis longifolia*) with *C. Mooreanum*, and the result was about a hundred seedlings of the plant now known as *Crinum Powellii*, but varying in colour from deep rose-crimson in the bud to pure white. Each scape is from 2 to 4 feet in height, and bears from seven to fifteen flowers, each bud opening in succession, so that a single spike continues to flower for several weeks. In vol. 37 of *The Garden*, 1890, there is a coloured plate of *Crinum Powellii*, with a description by Mr. Burbidge. In vol. 43, p. 536, of *The Garden* there is a notice of *C. Powellii* album, from Glasnevin, getting a First-class Certificate from the Floral Committee of the Royal Horticultural Society; and in vol. 44, p. 87, of *The Garden* there is a reference to the true parentage of *Crinum Powellii*. *W. P. M., Glasnevin.*

FROST IN STAFFORDSHIRE.—The following are the lowest "readings" here during the week ending November 26:—Sunday night, November 20, 2°; Monday, 5°; Tuesday, 12°; Wednesday, 27°; Thursday, 10°; Friday, 21°; Saturday, 16°. *A. Bateman, Hints Hall Gardens, Tamworth, Staffs., November 28.*

MILDNESS OF THE CLIMATE OF LITTLE-HAMPTON.—Littlehampton is so small that no apology is needed for stating that it is at the mouth of the river Arun, about four miles south of Arundel, in West Sussex. My party and I arrived there on November 13, and we were not a little surprised at the number of different garden plants still more or less flourishing and flowering in and around this clean little town. I noted between seventy and eighty species belonging to about fifty genera, and a horticultural contributor to a local newspaper enumerated a larger number observed in flower on November 15. Of course the majority of the species were quite past their best, but many were still very attractive. In some of the more sheltered situations Dahlias and Heliotropes were still in good flower. Roses one might say were plentiful, and the old pink monthly Rose was prominent on the cottages on the pleasant road between Littlehampton and Arundel. In some places Gloire de Dijon showed hundreds of flowers. Chrysanthemums were everywhere, clean and flourishing, and in very good variety; so were Marguerites (*C. frutescens*), both white and yellow, and in sheltered situations they were still ornamental. *Fuchsia fulgens* and many varieties of the hardier *F. macrostema* were in good condition. *Fatsia japonica* was at its best. *Tropaeolum majus*, *Antirrhinum majus*, *Kniphofia uvaria*, *Calendula*, *Pelargonium*, *Veronica* (various shrubby species), *Lobelia* and *Calceolaria* were also prominent. One of the most conspicuous and best preserved plants was *Cosmos bipinnatus*, pink, purple, and white varieties. *Passiflora corulea* was almost past flowering, but the fruit was very showy on many a house-front. In the small front gardens, too, was a number of fine old plants of the lemon-scented *Verbena*. Large-flowered Clematis were observed here and there. *Hydrangea*, *Campanula* (various), *Centaurea*, *Gailardia*, *Hypericum*, *Helichrysum*, *Scabiosa*, Pan-

sies, Stocks, Mignonette, Candytuft, *Nigella*, *Nicotiana*, *Petunia*, *Vinca*, and *Phlox Drummondii* were, among other things, observed. Bay-trees succeeded well in the neighbourhood, and the largest I have ever seen is in a garden not far out of Littlehampton. We stayed only eight days, but we had bright sunshine and warmth when the lower valley of the Thames was wrapped in a cold fog. I hear too that only the very fringe of the recent snow-storm touched Littlehampton. *W. Botling Hemsley.*

WEEDY WALKS.—If anyone is troubled with Sagina or other weeds, let him try Wood's "Electric Weed Killer." It has been used here on walks bordered with both grass and Box, without causing any ill-effects to either. We use it a little stronger than advised in the directions, and apply it through a rose-can, which does not spread the liquid too much, so that with ordinary care there need not be any injury done to edgings. One application, regularly distributed, will suffice for 12 or 18 months. *E. W., Cumberland Lodge.*

CARNATION "GLACIER."—In reply to "J. Murray's" note on p. 372 I give the following facts in support of my contention that the above-named variety and Mrs. S. J. Brooks are synonymous. I purchased Glacier four years ago, and two years later I obtained Mrs. S. J. Brooks. I kept the varieties separate for a year, and then failing to detect the slightest difference in the colour, form, or scent of the flowers, or in the habit or strength of the plants, I labelled the whole Mrs. S. J. Brooks, the name under which the variety obtained an Award of Merit in 1902. An examination of the catalogues of several London nurserymen who grow Carnations largely shows that the name Glacier no longer appears in their list of Carnations. *C. R. Fielder, North Mymms Park Gardens.*

SEAWEED AS MANURE.—In the Channel Islands seaweed is regularly gathered in large quantities and spread over the Potato fields, and the farmers there find it a most valuable manure. It is either scattered on the ground fresh from the sea or burnt in kilns, and the ash used instead of the raw material. At the seaside in this country seaweed is often brought up from the beach in carts and spread over the land, with very good result as regards the corn, but no effort has hitherto been made to burn it in a kiln. Surely this could be done without much difficulty and with great advantage to the public, for in this form iodine manure could be put upon the market for the use of gardeners. Of course, the object of burning the seaweed is to get rid of the smell, and to enable it to be kept in a portable form it could be put up in barrels for wholesale use, and in tins for selling in small quantities. There are many places along the coast where the industry could be started—anywhere, in fact, where seaweed is plentiful, and the expense of tinning would not be great. We should thus gain an excellent fertiliser, which is, moreover, said to be particularly good for Roses. *G. Layard.*

CONSTITUTIONAL VIGOUR OF FOREST-TREES.—In reference to Mr. Simpson's article, on p. 362, I think the matter has never been thoroughly grasped. Having been all through the nursery trade, and having had practical experience in forestry last winter, I have noticed that trees planted forty or fifty years ago have not made growth in proportion to their age; and this was not surprising as the seed had been gathered from gnarled and stunted trees; and seed is still gathered from such trees all over the country to a great extent. It is a well-known fact that seed gathered from immature plants of all kinds reduces the constitutional vigour of the offspring. I expect that few forest-tree nurserymen would be willing to guarantee that their seedlings are the produce of seeds obtained from good sound timber trees in full vigour. Selected two-year seedlings from the nursery-beds would help us to get back to the old constitutional vigour of our self-sown forests which is necessary, otherwise the planting is a great speculation, it being uncertain whether the trees will produce good timber, or stuff that will not pay to cart away at the end of the rotation. *Allec. D. Berney, Stanwix, Carlisle.*

FRUIT REGISTER.

APPLE HAMBLING'S SEEDLING.

I WAS surprised to see in the list of Cooking-Apples lately published in the *Gardeners' Chronicle* how very few had voted for this variety, nor have I seen it exhibited very frequently. It is a most satisfactory Apple here in every way, as orchard standards on the Crab-stock, and as bushes on the Paradise-stock in the gardens, succeeding well in either form. Its habit of growth is quite distinct, as the fruits are also. The trees make, strong, short-jointed wood, with but very little side-growth, the habit being very open and spreading, and have fine, large, healthy-looking foliage. The fruits are not produced in clusters, as they are in so many varieties, but are fairly evenly distributed over the tree, therefore requiring much less thinning than do the majority of Apples in a season like the past. The fruits are very heavy, large, and of good shape, and cook splendidly. They remain very green whilst on the tree, but after being stored for a time assume a nice yellow colour. This variety is well worth a trial in gardens, where it has not already been planted. I do not find the fruits keep so late as mentioned in most nurserymen's catalogues. *J. G. W., Bessborough.* [Hambling's Seedling was illustrated in the *Gardeners' Chronicle*, October 28, 1893, p. 535, from specimens supplied by Major Hambling, Dunstable, the raiser of this variety. It was distributed in the following year by Messrs. Geo. Bunyard & Co. Ltd.]

LAW NOTE.

THE SELLING OF POISONS.

At the Sheffield Police Court recently, three summonses, issued at the instance of the Pharmaceutical Society of Great Britain against a firm of nurserymen in Yorkshire, were heard. The summonses charged the defendants with unlawfully selling a poisonous vegetable alkaloid called Nicotine to a person whom they did not know, and who had not been introduced to them, with not labelling the bottle with the name and address of the seller, and with not entering in a book the name and address of the purchaser, the quality of the article sold and the purpose for which it was required.

Mr. Arthur Neal, who prosecuted, explained that the proceedings were taken under the Pharmacy Act of 1868, the particular section being passed to prevent the indiscriminate and careless sale of poison. The article sold by the defendants was an insecticide called "X-L-All Vapourising Fumigator." Last month an agent acting for the Pharmaceutical Society called at the defendants' place in Market Street, Sheffield, and asked for a bottle of the fumigator. The assistant said he would have to send it, whereupon the agent gave the address out of the city to which he was going, and eventually it was arranged that a boy should take the bottle to the station and give it to the agent. This was done, and the article was paid for. About one-fourth of it, said Mr. Neal, was analysed, and was found to contain enough nicotine to kill about thirty persons, whilst the entire contents of the bottle would be fatal to between 120 and 150 people. Nicotine was a most deadly poison. In the present instance the preparation was made in London, and, said Mr. Neal, the manufacturer guaranteed seedsmen against penalties and costs.

It was stated by a representative of the defendant firm that the transaction was due to ignorance of the law. The firm had not received a warning, and the representative added that the Pharmaceutical Society were prosecuting wherever they could, to prevent seedsmen selling the preparation. It was simply used for horticultural purposes.

The Bench imposed a penalty of £2, with £10 costs, on the first summons for unlawfully selling.

SOCIETIES.

THE ROYAL HORTICULTURAL.

NOVEMBER 29.—The ordinary fortnightly meeting of the Committees was held on Tuesday last, in the Royal Horticultural Hall, Vincent Square, Westminster. The exhibition, if compared with previous displays, was small; but the present season is usually the duller in the year.

THE ORCHID COMMITTEE recommended awards to novelties, consisting of two First-class Certificates and two Awards of Merit.

THE FLORAL COMMITTEE recommended a First-class Certificate to a new species of *Cotoneaster* (*C. angustifolia*), shown by M. MAURICE DE VILMORIN; also six Awards of Merit to Carnations, Chrysanthemums, and a seedling *Platycerium alcinore*.

THE FRUIT AND VEGETABLE COMMITTEE made no award to a novelty, but there were several collections of fruits and one of Potatoes exhibited.

At a meeting in the afternoon, twenty-nine candidates were elected to be Fellows of the Society.

Floral Committee.

Present: H. B. May, Esq., in the Chair; and Messrs. Geo. Paul, Chas. E. Shea, H. J. Jones, H. J. Cuthbush, W. Cuthbertson, Chas. Dixon, Chas. Jeffries, R. Hooper Pearson, Chas. Blick, G. Reuthe, Jno. Jennings, J. F. McLeod, Jno. Green, R. C. Notcutt, J. W. Barr, W. P. Thomson, Geo. Nicholson, E. H. Jenkins, M. J. James, Ed. Mawley, C. T. Druery, and C. J. Salter.

CHRYSANTHEMUMS.

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, made an imposing display of Chrysanthemums, staging them on the temporary concert platform at the north end of the Hall. The group was displayed in an effective style, and was one of the most striking exhibits in the building. Tall epergnes filled with large specimen flowers of Japanese varieties, backed with taller Palms, occupied the background, the front of the group being composed of vases containing exhibition blooms, the whole interspersed with bunches of decorative varieties and suitable foliage plants. An edging of *Ficus radicans* and *Panicum plicatum* completed the group. The flowers, considering the lateness of the season, were in every respect admirable; and among the more notable displayed we may mention Mrs. Swinbourne (see Awards), H. Stevens, Donald McLeod, Mrs. F. W. Vallis, Madame Paola Radaelli, and F. S. Vallis (Gold Medal).

MESSRS. WELLS & CO., LTD., Earlswood Nurseries, Redhill, Surrey, staged a collection of Chrysanthemums of all types—Japanese, decorative, incurved, single-flowered, Anemone, &c. Exhibition boxes were utilised toward the front, vases and epergnes being used at the background. Among the Japanese varieties we noticed good flowers of Madame R. Cadbury, J. E. Brooks (a new crimson-coloured seedling), Mrs. G. Beech (a yellow sport from Mrs. Swinbourne), Chas. Longley, Mary Ann Pockett (a large "bronze" Japanese), Dora Stevens, &c. Very pleasing was the display of "singles," also the collection of the fine petalled section known as the "silk-twist" type. The variety Madame E. Roger has pale-green florets, giving it an unique appearance (Silver Banksian Medal).

MESSRS. R. H. BATH, LTD., The Floral Farms, Wisbech, staged several vases of "decorative" Chrysanthemums. Yellow Globe, a decorative "incurved," was noticed, also a yellow sport from *La Triomphante*.

MR. GEO. CARPENTER, West Hall Gardens, Byfleet, Surrey, exhibited some pretty varieties of single-flowered Chrysanthemums, and J. B. FORTESCUE, Esq., Dropmore Gardens, Maidenhead, Bucks (gr., Mr. Chas. Page), also exhibited some single varieties, but no Awards were made to any of these.

MISCELLANEOUS.

MESSRS. JAS. VEITCH & SON, LTD., King's Road, Chelsea, staged hybrid Begonias of the winter-flowering type—Cyrene (pale rose-coloured, almost salmon, with indications of doubling in the flowers), John Heal (bright scarlet), Agatha (a very prolific type), Mrs. Heal, Julius, Winter Cheer (a very decorative semi-double, scarlet-flowered variety, flowers moderately large), Ensign, &c.

MESSRS. VEITCH also staged examples of *Jacobinia chrysocephala*, *J. coccinea*, and several plants of the

yellow *Linum*-like-flowered *Reinwardtia tetragyna*. A basket contained plants of *Lindenbergia grandiflora* in flower (Silver Banksian Medal).

MR. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, staged a number of greenhouse plants in flower, including a good batch of winter-flowering Begonias of the Gloire de Lorraine type, &c.; also *Primula obconica*, and *Poinsettia pulcherrima* in several named varieties—rosea, major, alba, &c. (Silver Banksian Medal).

A number of *Hippeastrums* was sent by the Hon. W. F. D. SMITH, Greenlands, Henley-on-Thames. The plants were remarkable for their early flowering; the individual flowers were only mediocre in quality, although the plants were all very free in flowering, some bulbs carrying as many as eight flowers.

MESSRS. AMBROSE & SON, The Nurseries, Cheshunt, Herts, filled the whole of one of the side tables with a miscellaneous collection, comprising Carnations, Roses, Lilliums, Cyclamen, Ericas, Azaleas, Chrysanthemums, &c. A collection of Grapes occupied the centre of the exhibit—Black Alicante, Gros Colmar, Muscat of Alexandria, Black Hamburgh, &c., also the new variety Melton Constable. Carnations in this collection were a notable feature, and were displayed in a very effective manner, fancy glass vases on a white table-ground setting them off to advantage. The variety Fascination appears to be identical with the variety described under "Awards" as Enchantress (Silver Banksian Medal).

MESSRS. CUTHBUSH & SON, Highgate, London, N., set up several vases of winter-flowering Carnations. General Kiroki is a new seedling variety with large scarlet-coloured flowers.

MESSRS. CANNELL & SONS, Swanley, Kent, set up one of their well-known groups of zonal Pelargoniums in many of the choicest varieties, also examples of Chrysanthemums in several types, such as Japanese, decorative, single, &c. "Beauty of Swanley" is an excellent white, reflexed Japanese variety. Alliance, a new incurved Japanese of pleasing yellow colour was also noticed. The "singles" displayed demonstrated the great beauty of this type of Chrysanthemum. Port Arthur is a seedling "Pompon" variety.

MR. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, staged a group of decorative foliage and berried shrubs, as on previous occasions recently (Silver Banksian Medal).

MR. JNO. ROBSON, Altrincham, showed a variety of *Bouvardia* named Mrs. McCulloch. The plants bore single red flowers, with long tubes surmounted by stellate segments. The variety Mrs. G. H. Kerslake had white flowers. Both varieties have been imported from the Antipodes.

Awards.

Carnation Enchantress.—A very large-flowered tree or winter-flowering variety. The colour is a very delicate shade of pink. An excellent flower but possessing very little fragrance (Award of Merit).

Carnation The President.—A tree variety, having beautifully-formed flowers of deep maroon-crimson colour; exceedingly rich. The petals, however, are fringed, and we could not detect any fragrance (Award of Merit).

Carnation Adonis.—This variety has bright red-coloured flowers, with rather more fragrance than the others, and less fringed petals. All the varieties named above and some others were shown by Messrs. BELL & SHELTON, Guernsey, who showed a collection of much merit. Each of the three varieties that gained an award was, we believe, raised in America.

Chrysanthemum Mrs. T. Dutton.—A large Japanese flower, with reflexed florets of moderate width. The colour is a vinous shade of red. Shown by Mr. N. MOLYNKUX, Wickham, Hants (Award of Merit).

Cotoneaster angustifolia.—This is a new species from China, of which fruiting sprays were shown by M. MAURICE L. DE VILMORIN, Quai de la Mégisserie, Paris. The leaves are 1 to 2 inches in length, very narrow, lanceolate, with blunt apices, shining green above, silvery-coloured beneath. The berries are produced abundantly in clusters, and are orange-coloured, of somewhat flattened form. In general appearance the sprays were suggestive of the Sea Buckthorn (First-class Certificate).

Platycerium alcinore Mayii.—This is a seedling variety of the species raised by Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton. The segments of the seedling plant are rather wider than those of the type, and the divisions are longer (Award of Merit).

Chrysanthemum Mrs. Swinbourne.—This is a very large white Japanese variety, with incurving florets. Shown by Mr. H. J. JONES (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), J. Gurney Fowler, De B. Crawshaw, J. Wilson Potter, F. Wellesley, H. Little, F. J. Thorne, R. B. White, H. A. Tracy, H. T. Pitt, J. Charlesworth, W. H. Young, A. A. McBean, W. Cobb, W. Boxall, J. Douglas, J. W. Odell, and G. F. Moore.

GEORGE C. RAPHAEL, Esq., Castle Hill, Englefield Green (gr., Mr. H. Brown), was awarded a Silver-gilt Flora Medal for a fine group of *Cypripediums* extending almost the whole length of the Hall. About 100 specimens, bearing in the aggregate nearly 500 flowers, were effectively arranged with Ferns, Palms, Crotons, &c. With but few exceptions the plants were varieties of *Cypripedium* × *Lecanum* raised at Castle Hill, and while all were good several exhibited superior qualities. The largest, best, and most distinct was *C.* × *Lecanum* *Raphaellanum*, a fine flower of perfect form, with a pale-green ground colour, the dorsal sepal being spotted with reddish-brown, its upper half pure white. Two other fine forms were *C.* × *Lecanum* *Castle Hill* variety and *C.* × *L.* *Ajax*, in both of which the white dorsal sepals were richly spotted with purple. *C.* *insigne* *Castle Hill* variety of the nitens class and other forms were also shown.

MESSRS. JAS. VEITCH & SONS, Chelsea, received a Silver Flora Medal for a very bright group of winter-flowering hybrids, including the hybrids of *L. Perrini*, *L.-C.* × *Statteriana*, *L.-C.* × *Egina*, *L.-C.* × *Decia*, &c. The centre plant was a fine specimen of *Cattleya* × *Mantini* with nineteen flowers, in front of which were several well-flowered specimens of *Cypripedium* *insigne* *Sanderae*. Other good hybrids included *L.-C.* × *leucoglossa*; *Laelia*, × *Digbyano-purpurata*, a very pretty white, rose-tinted form of which was shown; and the new *Lælio-Cattleya* × *Ziza* (*C.* *Mendelii* × *L.-C.* × *bella*).

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed a strong plant with three flowers of *Cypripedium* × *Norma magnificum* (*Niohe* × *Spicerianum*), with fine white dorsal sepal tinged with rose and bearing a purple line from the green base to the tip; *C.* × *Lecanum* "Queen of Portugal," with large white dorsal sepal with green base and rose-purple spotting; *C.* × *Lecanum* *aureum* *Westfield* variety, with a decidedly yellow tint in the petals and lip, and much white in the dorsal sepal; and *C.* *insigne* *Chantini Lindeni*, a yellow variety.

G. F. MOORE, Esq., Bourton-on-the-Water (gr., Mr. Page), showed a good variety of *Cypripedium* × *Miss Louisa Fowler*, *C.* × *Euryades*, and two others (see Awards).

WALTER COBB, Esq., Tunbridge Wells, showed *Odontoglossum crispum* *Elva*, a good blotched variety.

MESSRS. HUGH LOW & CO., Enfield, staged a group in which were *Cypripedium* *insigne* *Harefield Hall* variety, with four flowers; *C.* *insigne* *Ernesti*, *C.* *L. Laura Kimball*, and *C.* *i. Sanderae*, yellow varieties. Also *C.* *callosum* *Gratrixia*, a very pretty and distinct form, with white dorsal sepal with fine greenish lines; petals greenish tipped with rose, the one bearing the usual dark raised spots on the upper margin, and the other without them. The labellum is of a peculiar purplish colour.

MR. C. BERANCK, Rue de Babylone, Paris, sent a white form of *Cattleya labiata* with slight pink tint on the lip.

Awards.

FIRST-CLASS CERTIFICATES.

Lælio-Cattleya × *Pallas magnifica* (*L. crispata* × *C. Dowiana*), from G. F. MOORE, Esq., Bourton-on-the-Water (gr., Mr. Page). A very fine flower, with labellum much broader and less elongated than in the type. Sepals and petals magenta-rose, lip claret-crimson.

Catacymbium pilatum (*Bungrothii*) *aureum*, from L. B. SCHLESINGER, Esq., Bedales, Haywards Heath. — A fine large wax-like flower of a lemon-yellow tint.

AWARDS OF MERIT.

Cypripedium × *Miss Blanche Moore* (parentage unrecorded), from G. F. MOORE, Esq. (gr., Mr. Page). — A very fine well-rounded flower, in the production of which *C.* *insigne* *syhetense* might have been used, the flower approaching that shown by Mr. MOORE at the last meeting as *C.* *insigne* *syhetense* *giganteum*. Dorsal sepal round, white in the upper half, apple-green spotted with chocolate in the lower. Petals and lip soft yellowish-green, marked with chocolate colour.

Cypripedium × *Rolfci superbum* (*bellatulum* × *Rothschildianum*), from Mr. C. BERANCK, Paris. — A very fine flower, in form distinctly intermediate between the parents. Flowers white, beautifully marked with dotted lines of purple.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), and Messrs. J. H. Veitch, J. Willard, G. Reynolds, W. Pope, Geo. Kelf, H. Parr, A. Dean, S. Mortimer, Jas. Gibson, E. Beckett, Jos. Cheal and Owen Thomas.

An excellent collection of fruit was shown by Sir CHAS. RUSSELL, Bart., Swallowfield Park, near Reading (gr. Mr. F. Cole). The collection comprised Apples, Pears, Grapes and Melons. The Apples were nearly all dessert varieties, excellently coloured, and splendid examples; Cox's Orange Pippin, Peasgood's Nonesuch, Gascoyne's Scarlet, Mère de Ménage and Fearn's Pippin were prominent. The examples of Muscat of Alexandria Grapes were not only of a rich colour and finish but were well-balanced bunches. Cooper's Black and Black Alicante were also shown well. Several golden reticulated Melons were included, and among the Pears were good dishes of Vicar of Winkfield, Chaumontel, &c. (Silver-Gilt Knightian Medal).

Mrs. NOBLE, Park Place, Henley-on-Thames (gr., Mr. T. J. Powell), showed a novelty, although by no means a new departure, in demonstrating the possibility of procuring new Potatoes from old tubers placed in the dark without soil. Examples were displayed of tubers selected for this purpose, others with sprouting tubers just forming, and still others with new tubers ready for culinary purposes. The old tubers were the produce of a crop of 1903, and had been denuded of all sprouts until they were placed in a Cucumber-frame on October 17, 1904. A dish of cooked examples produced from them was displayed. It is claimed that by this means good new Potatoes may be had from September to February (Silver Banksian Medal).

The Earl of CARNARVON, Highclere, Newbury (gr., Mr. Pope), staged a collection of Onions. The bulbs were not of the abnormal exhibition size, but of a good serviceable kitchen type, clean, solid and well shaped. The seed was sown during the first week in March, and the seedlings planted-out at the end of April. Walker's Exhibition, The Aristocrat, Challenge, Wroxton Improved, and Veitch's Main-crop are some of the better varieties shown (Silver Knightian Medal).

MESSRS. W. & J. BROWN, florists, Stamford and Peterborough, staged forty-five dishes of Apples and Pears. The fruit, as has been general this year, was well coloured (Silver Banksian Medal).

Several varieties of seedling Apples were submitted, but none were sufficiently good to obtain an Award.

A basket of fruits of Apple Chelmsford Wonder, grown within the five-mile radius, was shown by Mr. W. ROUPELL, Roupell Park, S.W., and obtained a Vote of Thanks. This Apple was raised from a cross between Dumelow's Seedling and Blenheim Pippin, and was figured in these pages November 21, 1891, p. 613.

LEEDS PAXTON.

NOVEMBER 18, 19.—The annual exhibition of the above Society was held in the City Hall, Leeds, on the above dates. The quality of the cut flowers and groups was of a high order. The show was opened by the Lady Mayoress, and there was a good attendance on both days. The arrangements reflected credit on the energetic Secretary, Mr. H. Carter; the show has undoubtedly developed and has become a credit to the city.

GROUPS.

The 1st prize for a miscellaneous group of plants occupying a space 70 feet square was awarded to JOSEPH PICKERSGILL, Esq. (gr. Mr. J. F. Donoghue). The plants were artistically arranged, and included well-coloured *Codæums* (*Crotons*), *Oneidium varicosum* *Rogersii*, *Odontoglossum Pescatorei*, *Cattleya labiata*, &c. MATTHEW KITCHEN, Esq. (gr. A. Gamble), was placed 2nd, with W. BECKWORTH, Esq., Headingley Castle (gr. J. Harrison), 3rd. Mr. PICKERSGILL also had the best Chrysanthemum group, in which class G. BUCK, Esq., Hall Lane, Horsforth, was 2nd.

For a group of miscellaneous plants arranged on a table space measuring 5 feet by 3 feet, Mr. A. HARRISON was 1st, followed by Mr. T. HORTON, 2nd, and Mr. J. PICKERSGILL, 3rd.

Prizes were offered for a table of white Chrysanthemums with *Begonia* *Gloire de Lorraine* and *Lily of the valley*. The best exhibit was one arranged by E. GREENE, Esq., Adel (gr. Mr. A. Lupton). 2nd, Mr. J. BOYLE, 3rd, Mr. J. PICKERSGILL.

CUT FLOWERS.

The premier collection of thirty-six *Chrysanthemum* flowers, to include eighteen incurved and eighteen Japanese varieties, was staged by F. W. JAMESON, Esq., Ashton Hall, Ferriby (gr., C. Jennings). His most notable flowers were *F. S. Vallis*, *Marquis Venosta*, *Mrs. Barkley*, *Madame P. Radacliff*, *Bessie Godfrey*, and *W. R. Church*, all of which were remarkable for size and colour. The incurved varieties were of excellent colour and well finished. The prize carries with it a Silver Challenge Vase. 2nd, J. THORNTON, Esq., Lumb Hall Nurseries, Drighlington.

MR. JENNINGS was also 1st for twelve Japanese varieties, in which class Mr. J. PETTINGER was 2nd. Mr. J. PETTINGER also led with a table of cut flowers arranged for effect.

In the local class for twenty-four *Chrysanthemums*, distinct, to include twelve incurved and twelve Japanese flowers, Mrs. WILSON (gr., Mr. Leech) took 1st prize; followed by Mrs. BOWRINGHAM (gr., W. Moore), 2nd; and by Mr. C. SHAW, 3rd.

MR. NORMAN was successful in the class for six Japanese varieties, distinct; and Mr. J. PAUL for a similar number of incurved varieties.

The best six vases of Pompon varieties were those of Mr. NORMAN, while the best six vases of singles belonged to Mr. A. CLARKSON.

Fruit exhibited was of good quality, the principal prize-winners being Mr. NORMAN, Mr. A. BUSSEY, Mr. R. BULLOCK, and Mr. C. SHAW.

In the classes for vegetables, Mr. GROUNDWELL won all the principal prizes, securing thirteen 1sts.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

ANNUAL MEETING.

NOVEMBER 26.—The annual general meeting of this Society was held in the Music Hall buildings, Aberdeen, on the above date, Mr. Samuel Pope, Vice-Chairman of the Directors, presiding. There was a good attendance.

The Annual Report was submitted as follows:—

"Although the recent exhibition, from a horticultural point of view, was hardly so good as some recent ones, the Directors have much pleasure in reporting that, from a financial point of view, the past season has been the most satisfactory one since 1892, a result which has been attained by keeping down the expenditure as much as possible. The income for the year amounts to £413 2s. 4d., and the expenditure has been £426 7s. 6d., leaving a small deficit of £13 5s. 2d., the smallest deficiency experienced by the Society for the last twelve years. Besides the £320 of bequests belonging to the Society, there is a free balance of £72 2s. 10d. to carry forward to next season.

The report and financial statement were put to the meeting and adopted. Mr. John McKay, Horburn Gardens, Aberdeen, then moved that Rule 4 (General Rules) be altered to read as follows:—"Management.—The affairs of the Society shall be under the management of the acting directors, consisting of a Chairman, Vice-Chairman, Secretary, and Treasurer, and twelve members, elected irrespective of any class (five of whom shall form a quorum). The Society shall consist of three divisions—viz., (1) professional gardeners, (2) nurserymen, and (3) members neither professional gardeners nor nurserymen." Mr. J. M. Simpson, Varvill Bank, Aberdeen, moved, as an amendment, that "The affairs of the Society be under the management of the acting directors, consisting of a Chairman, Vice-Chairman, Secretary, and Treasurer, and twenty members, elected irrespective of any class (seven to form a quorum). The Society to consist of four divisions—namely, (1) professional and market gardeners, (2) nurserymen and florists, (3) amateurs, and (4) working class." On a division, Mr. Simpson's amendment was adopted. The Honorary President, Vice-President, and Honorary Directors were re-elected. Mr. Thomas Ogilvie, of Kepplestone, was elected Chairman of the acting directors for the ensuing year, with Mr. Samuel Pope as Vice-Chairman. Twenty acting directors were then elected for the ensuing year, and Mr. William Reid and Mr. William Wyllie were reappointed auditors. For the office of Secretary a number of local lawyers were proposed, but it was ultimately agreed by a vast majority that Mr. J. B. Rennett, advocate, be again re-elected to the post.

GARDENERS' DEBATING SOCIETIES.

DEVON AND EXETER GARDENERS'.—On Nov. 23 a lecture on "Cultivation and Pruning of Pyramid Fruit Trees, with a Practical Demonstration of Pruning," was given by Mr. Summers. The advantages of root-pruning and the methods adopted in general pruning to produce the best results were amply demonstrated. Specimens of growing fruit-trees were used to illustrate the lecturer's remarks. The most suitable varieties to cultivate, and the various peculiarities of individual varieties were dealt with. The lecture was greatly appreciated by the members. Mr. E. Cole, gr. to Mr. W.

Heberdeen, C.B., Elmfield, won the 1st prize for the best two dishes of Apples with the varieties King of the Pippins and Bleheim Pippin. A. H.

CRAWLEY AND DISTRICT GARDENERS.—A paper on "Japanese Chrysanthemums for Exhibition" was read on Wednesday, November 23, by Mr. M. Mills, the remarks being illustrated with blackboard drawings and numerous diagrams. The best methods of treatment for successful cultivation of the Chrysanthemum, from the early stages to the finishing of the bloom for exhibition, the proper composts for potting, the right time for taking the cuttings, stopping and taking the buds, &c., were all dealt with. He also described the various kinds of pests which the Chrysanthemum is subject to, such as thrip, green-fly, mildew, rust, &c. Special reference was made to feeding and watering the Chrysanthemum. An indoor temperature of from 45° to 54° suited the Japanese section. The lecturer also gave details for preparing the blooms for show purposes. A discussion followed. Mr. H. Brookes, the Gardens, Deerswood, Infield, exhibited a good plant of *Cypripedium* insigne, for which the Society's Certificate was awarded.

REDHILL, REIGATE, AND DISTRICT GARDENERS.—This Society held its fortnightly meeting on November 22, Mr. W. P. Bound in the chair. Mr. Townsend gave an interesting lecture on "A Berkshire Water-garden in Summer." A number of slides of *Nymphaea* shown on the screen were of much interest. Information was given with regard to the formation of a water-garden, also the position and soil most suited for the purpose. The lecturer emphasised the value of this beautiful and fascinating form of gardening. Varieties of plants were mentioned that were suitable for cultivating in water-gardens, also the proper depths for planting them. Pictures of *Hydraugia Hortensia* and *H. paniculata* were thrown upon the screen, showing how readily these plants lend themselves to outdoor culture. F. C. L.

MR. FRANK ADOLF REHDER.—We regret to record the death, on the 28th ult., of Mr. REHDER, a member of the Orchid Committee of the Royal Horticultural Society. Mr. REHDER, who was in the 42nd year of his age, cultivated a collection of Orchids at his residence at 34, The Avenue, Gipsy Hill, his business address being 29, Mincing Lane, London.

RAILWAYS IN RHODESIA.—A pamphlet on Railways in Rhodesia, with a few notes on their construction and on the country through which they pass, by Mr. E. S. WRIGHT, gives an interesting sketch of the recent progress of the colony. Maps and pictures are added to further illustrate the attractions of the district, and the booklet also contains a description of the wonderful Victoria Falls by Mr. E. F. KNIGHT. Intending visitors to Rhodesia may obtain information through Messrs. Cook & Son, Ludgate Circus; or at the British South Africa Co., 2, London Wall Buildings, E.C. The contrast between civilisation and uncivilisation is forcibly emphasised in this publication.

ENQUIRY.

GREEN-HEART AND BULLET TREE.—Can any reader supply information as to the use of these woods for engineering and constructional purposes in the United States? Neither is mentioned in Sargent's Census Report. Rennes.

ANSWERS TO CORRESPONDENTS.

* * **EDITOR AND PUBLISHER.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPLE SPOT: G. F. P. The blotches on your Apples are caused by a fungus, *Fusicladium dendriticum*. The leaves and young shoots are also liable to attack. The disease is perpetuated through the winter by means of the mycelium (growth) present in fallen fruits. The following method is recommended for combating the disease:—Drench the trees in winter with a solution of sulphate of iron. Spray the trees with diluted Bordeaux-mixture next spring, when the flower-buds begin to open, again when the petals of the flowers are falling, and lastly when the fruits are about the size of Peas. Destroy all diseased fruits.

APPLE AND PLUM SPURS: C. R. B. The eggs of an insect. Spray with paraffin emulsion, and again in the spring, when the eggs are hatching.

CORRECTIONS: BRISTOL CHRYSANTHEMUM SHOW. Mr. H. Baker, who won the 1st prize for the best collection of twelve Japanese Chrysanthemum flowers, also won the 1st prize offered for vegetables. — **ABERDEEN CHRYSANTHEMUM SHOW.** Our correspondent at Aberdeen was in error in describing the fine exhibit of fruit as from Messrs. T. Rivers & Son, it having been shown by Messrs. Geo. Bunyard & Co., Maidstone.

CHRYSANTHEMUMS: J. B. For cultivation as specimen plants you might select the varieties Col. W. B. Smith, Miss Alice Byron, Western King, R. Hooper Pearson, Mrs. J. I. Thorneycroft, and Mrs. Geo. Mileham.

GRUBS DESTROYING ROOTS OF LILY OF THE VALLEY: S. S. The grubs are those of the garden Swift-moth, *Hepialis humuli*, often very destructive to garden produce. The moth appears in May and June, and lays its eggs upon the ground amongst plants of various kinds. The grubs feed onwards till the following spring, when pupation takes place. Your better plan will be to remove all the plants to fresh ground, and at the same time to shake the soil from the roots, destroying any grubs that may be found. The infected plots should then be given a good dressing of lime and soot, and roughly forked over two or three times during winter. Trapping with Potatoes might very likely do good, especially in autumn. The best method of doing this is to pass a stick through the bait and bury it a little below the surface. It should then be examined and cleared of grubs every three or four days and reburied. As a means of preventing the moths laying their eggs on the beds, you might try the effect of covering the beds with fish-netting previously dressed with a thick coat of tar and cart-grease. This should be placed over the beds early in May, and should the dressing become dry a second coat might be applied.

MUSHROOM BED: Allen Bros. The Mushrooms are suffering from fungus tumours, a disease too well known throughout Europe. It is caused by a parasitic fungus called *Mycogone perniciosa*. It has in all probability been introduced with the manure, and has spread from one centre. Diseased Mushrooms should be removed, along with the surrounding soil, as soon as they are detected, otherwise the spores will spread rapidly, and the whole crop will soon be diseased. When the crop has been removed the soil should be thoroughly well mixed with gas-lime, but should not under any circumstances be used for a future crop. All houses should be thoroughly disinfected by burning sulphur before being used again. G. M.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers, still less to casual readers, to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in this issue are requested to be so good as to consult the following numbers. — *Crofton*. 1, Cox's Orange Pippin; 2 and 3, Blenheim Pippin; 4, Cellini Pippin; 5, King Harry. — *W. W. Stafford*. Glout Moreau. — *J. R.* 1, American Mother; 2, Mère de Ménage; 3, Warner's King. — *Yorkshire Reader*. Pear without initials, Beurré de Jonghe. — *Gibson*. Apples, Sturmer Pippin; Pear, Autumn Nelis. — *F. D.* The green one is Winter Greening (French Crab), and the red one Orange Goff. — *James Davis*. 1, Sam Young; 2, Franklin's Golden Pippin; 3, not recognised, it is too poor a specimen. — *H. C.* 1, 2, 3, and 4, Blenheim Pippin; 5, Flower of Kent; 6, Hollandbury. — *J. M. S.* 1, Washington; 2, Warner's King; 3, Prince Albert. — *Subscriber*. 1, Lodgemore Non-

pareil; 2, Ashmead's Kernel. — *St. Clere*. Pear Napoleon.

NAMES OF PLANTS: See note under "Names of Fruits." — *W. S. Y.* Send the Chrysanthemum to some large grower of these plants. — *Fl. Claes, Bruxelles*. Anthurium ornatum, Schott. This is the true plant of Schott, and the first time we have seen it alive. Two or three species have wrongly been cultivated under this name in gardens. — *A. B. C.* Iris fetidissima. — *H. N.* 1, *Cypripedium* × *Maynardi* (purpuratum × *Spicerianum*); 2, *C. x Dauthieri*; 3, *Epidendrum purum*; 4, *Cyrtodeira fulgida*.

PEAR SCAB: J. P., Guernsey. The fruits are affected with a fungus, *Fusicladium pirinum*. Apply the same preventive measures as recommended above for Apple-spot.

SCARLET RUNNER BEANS: D. F. The soil best suited for the growth of Scarlet Runner Beans for seed is a deep but fairly light one of good heart. The seeds may be sown in broad drills 8 feet apart, and when the shoots have reached a height of from 3 to 4 feet the plants are stopped; lateral growths are thrown out; these get quickly into flower and bearing. The lighter the land in reason the earlier will seed-pods be formed. It would be misleading to mention a probable yield per acre, as so much depends upon the season, the character of the soil, and the locality. Scarlet Runner Beans are only sparingly grown in this country for seed-production, but mostly in the counties of Essex and Kent. Large supplies of seed come to this country from drier and warmer districts abroad, in which the climate is not so variable as in Great Britain. It is to be feared your stiff loam would not favour a reliable harvest of seed. During the last two seasons the crops of Kidney Beans grown for seed in this country have been small, owing to the cold, damp summers.

SEEDLING APPLE: C. M. We do not think the fruit is equal to existing varieties, but you should submit the variety for the consideration of the Royal Horticultural Society's Fruit Committee.

SWITZERLAND: James Corke. The flower you gathered from a bush in Switzerland is *Cosmos bipinnatus*, a Composite, and a native of Mexico.

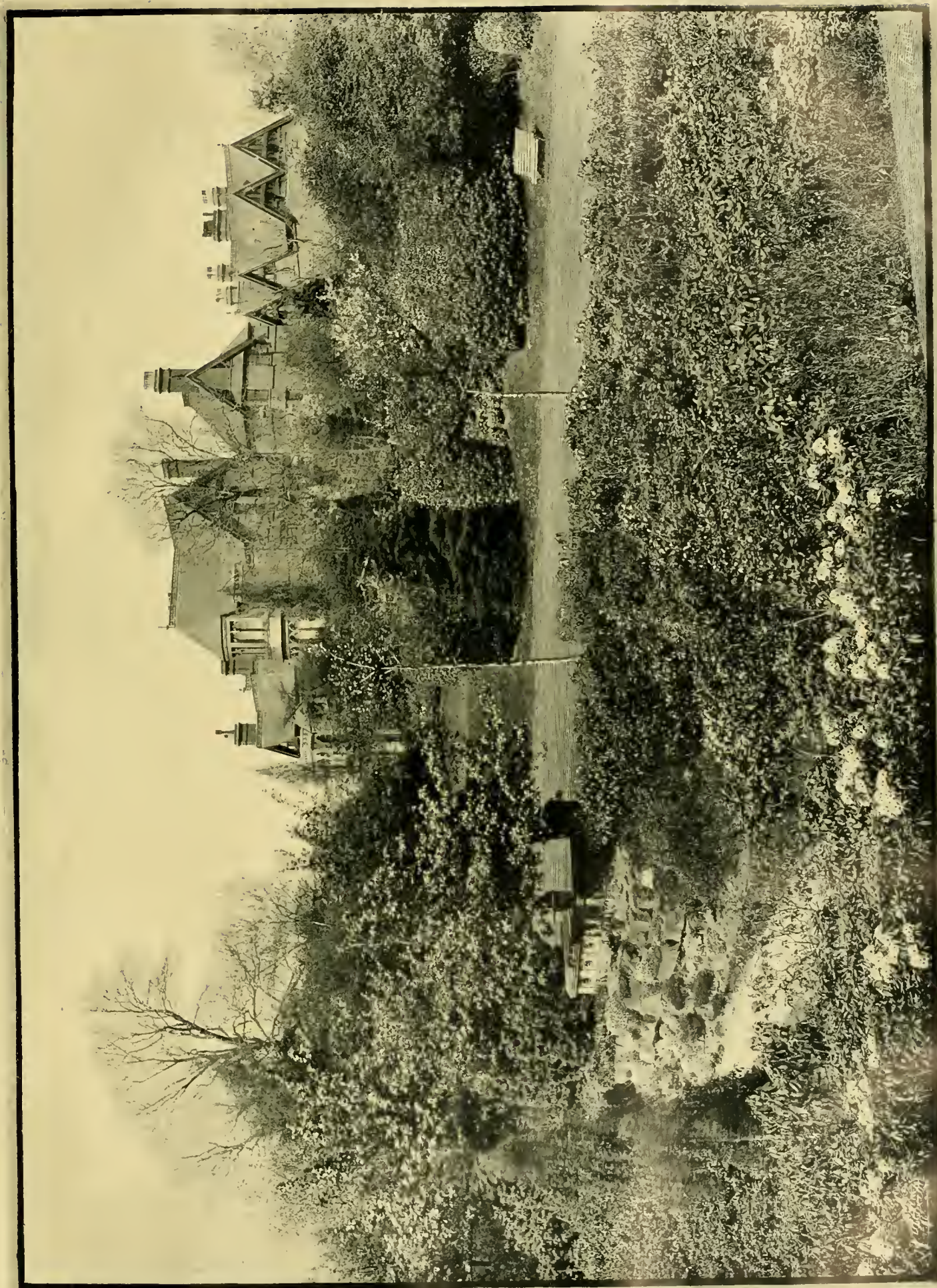
TIMBER-BORING GRUB: W. P. R. *Sirex gigas*, the Giant Saw-fly.

TUBEROSE: Young Gardener. The fungus on Tuberose is *Hypochnus filamentosus*, new to this country. It has occurred previously on *Amaryllis*, and has several allies that are destructive parasites. As the fungus is to a great extent superficial, it should be readily checked if the treatment is thorough. Apply to the diseased patches, with a brush or piece of sponge, a rose-coloured solution of permanganate of potash to which a little soft-soap has been added. Afterwards spray all plants, diseased and healthy alike, with a similar solution. G. M.

WATER FOR STOVE PLANTS: Anxious. Though there are some who believe that cold water may be applied to the roots of plants growing in a heated atmosphere with good results, we do not recommend the practice. On theoretical or scientific grounds, anything that is likely to cause a check to growth should be avoided, and if a plant is growing in an atmosphere having a temperature of 70°, the soil and roots in the pot will be approximately of the same warmth; therefore if water be applied at a temperature of 35° the consequent loss of heat about the roots occasioned thus suddenly must for a brief time arrest the functions of the plants. The act of "watering" is a process that must be repeated again and again, and such checks would be frequent. You cannot do better than apply rain-water, which by exposure in tanks in a heated house becomes almost equal in heat to the atmosphere of that house.

COMMUNICATIONS RECEIVED.—Ewell—F. P.—A. H. D.—J. W.—A. B.—Northampton—E. L.—W. B.—P. B.—H. K.—W. G. S.—J. G. W.—F. J.—G. B.—J. H.—D. W. T.—G. J.—Forest Hill—C. I.—E. E. M.—G. W.—W. Taylor—E. J. A.—W. H. C.—A. C.—B. Ashton.

(For Markets and Weather, see pp. x. and xii.)



HIGHBURY, BIRMINGHAM, THE RESIDENCE OF THE RT. HON. JOSEPH CHAMBERLAIN, M.P., BEING A VIEW FROM THE SOUTH-EASTERN PORTION
OF THE PLEASURE GROUNDS.

THE

Gardeners' Chronicle

No. 937.—SATURDAY, Dec. 10, 1904.

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WINTER FLOWERS AT TRING PARK.

THE RIGHT HON. LORD ROTHSCHILD expects that there shall be a good show of flowers in his famous gardens at Tring Park (Herts) at all seasons of the year, and long experience has indicated the best subjects to grow in order to secure such a continuity of flowers. At Tring Park the different types of Carnation are given the first place, not only on account of their varied, handsome, and fragrant blossoms, but because one who understands their management can obtain from the various types a more continued show of flowers than can be got, perhaps, from any other class of plants. In summer, the houses of large specimen plants of Carnation Souvenir de la Malmaison afford a magnificent sight. Then follow the florists' Carnations and Picotees, and now the winter-flowering kinds. At present several houses are gay with plants in flower or in bud. Of those now in bloom Mr. Arthur Dye, the head gardener at Tring Park, pointed out as the best for late varieties Mrs. Leopold de Rothschild, a charming blush-pink kind, which can be obtained during many months; Winter Cheer, a very profuse-flowering, rich scarlet variety; Mrs. S. J. Brooks and Glacier (whites), Duchess of Devonshire (pink with white edge), Prince of Wales and President Carnot (dark claret-crimson), and Challenger (cherry-red).

Zonal Pelargoniums make a brilliant show in the house devoted to them, the large trusses of bloom affording great variety of

colour. One of the best is named Ferrières, it having been received from that famous garden. It bears fine trusses and large "pips" of a glowing orange-scarlet colour. Beneath the staging the Gloxinias are at rest, and they will be kept from growing as long as possible, in order to have them in flower in July and August.

Sutton's strain of Gesnera of the Nagelia section furnishes great favourites for warm-house decoration in winter. One side of a house is beautified by them, the colours of the pyramidal heads of bloom varying from white and yellow to clear yellow spotted with bright scarlet, and their handsome velvety leaves have various shades of green with reddish-claret markings. These plants are easily grown from seeds in the first place, and continued by potting-up the corms after the resting season. They are excellent plants for use in indoor decoration.

The next house contains Begonia Gloire de Lorraine and its white variety, Turnford Hall. Some of the specimens are suspended from the roof, and the mingling of the profusion of rose and white flowers is very effective.

The large-flowered Amaryllis (Hippeastrums) are great favourites with Lord Rothschild, who for the last few years has personally superintended the development of a very fine strain of them, the rich scarlet and crimson varieties being remarkably good. Attempts are made at Tring Park not only to secure individual blooms of the finest quality, but also to get several flowers expanded on a spike at one time, and not in single blooms or pairs as in many garden forms. There has been a fine show of them for a considerable time, but only a few of the latest remain, the earlier-flowering plants having been potted-up for bloom again next season. Nerine Fothergilli major and a few other showy varieties have produced a brilliant effect, and are now finishing for the year. A houseful of the new florists' type of Heliotrope has a dense show of fragrant blooms.

Begonia socotrana occupies one side of a house, its fine, fleshy green foliage surmounted by pretty flowers having excellent effect. Mr. Dye finds it a very desirable and useful plant for use in winter decorations, for when the present ones have been used or have passed, others will be produced for a long time. The other side of the house is furnished with Begonia Gloire de Sceaux, a purple-leaved, free-flowering variety which continues in flower a considerable time. These plants are arranged with Asparagus myriocladus among them, and the graceful habit of this excellent decorative plant is well shown among the more formal leafage of the Begonias.

A fine lot of Moschosma riparium in bud, a large stock of scarlet Poinsettias, a showy collection of the best Chrysanthemums, a long range of Mignonette just beginning to flower, sweet Violets, Primulas, and other decorative plants, show that the supply of flowers will be well maintained.

THE ORCHIDS.

The great feature in the Tring Park collection now as always is the house of magnificent specimens of Phalaenopsis, many of which have attained to gigantic proportions. Some of the plants, such as the original P. intermedia Portei, which is now bearing a

branched spike of fifty flowers and buds, have been at Tring for many years. These plants bloom regularly and well, and do not suffer thereby, but increase in vigour and size every year. This is all the more remarkable as the greater part of the Orchid collections have lost numbers of plants, or only succeeded in keeping a few alive during the time that the Tring Park plants have been thriving in such a satisfactory manner. The huge specimens are on large teak cylinders or in baskets, and the long roots pass through the woodwork staging, and reach the moisture-holding surface beneath. The house in which they are growing is maintained at a comfortably warm temperature and is not allowed to vary much, although at night the temperature is always less than during the day. Most of the large plants are furnished with spikes of surprising vigour, several of the specimens of P. Schilleriana and P. Aphrodite having six to eight strong branches to the spike, each equal to an ordinary inflorescence.

In the Cattleya-houses the show of autumn-flowering C. labiata is nearly over, and with the remaining are a few C. Dowiana, Lælio-Cattleya × Cranstoniae and some other hybrids, together with some graceful Dendrobium Phalaenopsis, Arundina chinensis, &c. The house of Lælia anceps has the plants sending up flower-spikes, but not in such profusion as in some seasons.

The great quantity of Vanda teres is planted in sphagnum in beds in the house they occupy and promise well for flower. Several strong specimens of the remarkable large white Angraecum infundibulare are in bloom. This rare plant grows very luxuriantly in a warm-house at Tring Park, and has been flowering for some months past.

The Cypripediums have many good varieties in flower, the most beautiful being the fine seedling form of the yellow C. insigne Sanderae, and the most singular C. insigne "Oddity," a curious flower, with three regularly arranged lips to each bloom.

Among the Honourable Walter Rothschild's fine collection of Masdevallias, Restrepias, Pleurothallis, &c., a large number of pretty species and hybrids are in flower. Bulbophyllum Ericssonii, Cirrhopetalum Andersoni and others of these genera are sending up blooms, and the unique Cirrhopetalum Rothschildianum, which has just gone out of flower, is thriving although it is a slow grower. Mr. Warrior is foreman in the Orchid department, as in the late Mr. Hill's time.

Two improvements in the management of the gardens, the one effected and the other just begun, have been brought about since Mr. Dye has been appointed head gardener. The accomplished work is a range of forcing houses in which plants can be propagated and grown on in the early stages, and the projected improvement is a range of bothies for young gardeners, 90 feet by 50 feet, to be fitted with all the best sanitary appliances.

Fruits are reported to have been good generally, and a glance into the large fruit-rooms filled with rich stores of the best Apples and Pears bears witness to the truth of the report. The Apples for the greater part are orchard-grown fruits, but they are large and of good colour. B.

NEW OR NOTEWORTHY PLANTS.

BOWKERIA TRIPHYLLA.*

[SEE SUPPLEMENTARY ILLUSTRATION.]

WE are indebted to Lord Walsingham and Mr. Gumbleton for the opportunity of illustrating this interesting and attractive shrub or small tree. It has sessile, lanceolate leaves in groups of three, and stalked, axillary, cymose panicles of white flowers resembling those of a small *Calceolaria*, to which genus of *Scrophulariaceae* it is nearly allied. For the botanical description we may refer to Mr. Hiern's account, cited in the foot-note. Lord Walsingham grows the plant at Merton Hall, near Thetford, under glass; but in the Isle of Wight, in the gardens of Mrs. Gwytherne Williams, at St. Lawrence, it proves hardy; and from her plant the specimen sent us by Lord Walsingham, and here figured, was obtained.

The plant is a native of the coast region of Cape Colony, and extends eastward to Natal. Hiern, the latest monographer of the genus, makes no mention of the colour of the flowers; but Harvey, who was the first to describe the plant, probably from dried specimens, says the flowers are red. In the cultivated specimens they are pure white, shining like porcelain, and covered with a viscid exudation. In the interior they are dotted with minute red spots. They have a peculiar faint odour.

The subjoined description and the accompanying illustration will suffice to show what an interesting addition we have here to our garden flora. Mr. Worthington Smith, in drawing the flower, noticed the careful provision for self-fertilisation. The lower lip—designated by inadvertence as "upper" in the illustration, and shown in section at the lower right-hand corner of the drawing—is three-lobed, the three lobes being closely folded over the tube of the corolla, so that access of insects is prevented. The pollen, moreover, is shed when the flower is still in bud. The pollen-grains, as observed by Mr. Worthington Smith, are oval, with one slit, and are extremely minute. In the drawing they are shown as magnified 300 diameters. In shape and size they correspond fairly with those of other *Scrophulariads* described in Edgeworth's "Pollen"; but these are all described as having three bands.

EXPERIMENTAL CULTIVATION.

(Continued from p. 348.)

MANURES FOR SPECIAL CROPS.—CABBAGES.—

Amongst green vegetables these constitute one of the most important to the cultivator for sale, and it is not surprising that many experiments have been devoted to them with a view of increasing the produce or lessening the cost of production. From the seller's standpoint there is a material difference between spring and autumn Cabbages, and the majority concentrate their efforts upon the early crop. In the Hadlow experiments both have been dealt with, but it is only necessary here, for the purposes of illustrating methods adopted, to refer to the spring Cabbages. Stable or farmyard-manure is almost invariably employed

under ordinary systems in considerable quantities, and the profits depend largely upon the cost of this material. Where it is secured free or at a nominal price, empty carts returning from market being loaded regularly, so that the carriage is not an additional expense, such manure may be relied upon to give satisfactory returns. If it has to be purchased the item is a heavy one, and any means of reducing that, with equally good crop results, will tell materially in the grower's favour.

This has been recognised by Dr. Dyer, and duly provided for in the experiments he has conducted with Mr. F. W. G. Shrivell. For example, London dung has been used as a heavy and light application, namely, 50 loads (25 tons) and 25 loads (12½ tons) per acre at a cost of £10 and £5 lb. respectively for the same area. The lighter dressing has been repeated with phosphates, potash, and nitrate of soda, the latter at 2 cwt. and 4 cwt. per acre, and potash has been withheld in two cases. For a portion of the time there were two plots which received no dung, but both had mineral manures with and without potash, and nitrate at 4 cwt. and 8 cwt. per acre; while in some cases 6 cwt. of nitrate were tried. In all ten experiments have thus been allotted to Spring Cabbages, the produce varying from 16 tons 15 cwt. per acre (cost of manure, £5), to 21 tons 3 cwt. (cost of manure, £8 5s.); the general results being distinctly in favour of the smaller application of dung with mineral manures and nitrate at 2 to 4 cwt. per acre, the relative effects of the latter depending to a considerable extent upon the character of the season. It must be mentioned, however, that in two instances a complete chemical manure without dung has given as good returns as where the dung was used in addition to the artificials, and at a reduced cost for manures of £4 10s. per acre.

There is room for further experiments in this part of the subject, for the physical character of the soil exerts a most important effect. I have grown Cabbages and experimented with the crop in soils of very different character, and while in some heavy but well-worked samples the artificial manures have afforded all the assistance that was needed, in others dung was absolutely essential to the best results, and to employ chemical manures alone was practically throwing the money away. That nitrate of soda is a most useful help for this crop is easily proved, but its utility depends entirely upon the time of application and the prevailing weather conditions. Though this is well known in practice, it is not always duly allowed for in experimental work, or the times are not fully stated when the dressings were supplied. To ensure an even crop of the best early spring Cabbages, the plants must be well established before winter; but an excessive soft growth is not required, in fact it is detrimental to the grower's prospects, as severe weather in the winter months will often decimate such a crop. Sturdy plants, ready to start with the first improvement in weather conditions in spring, are what are needed; and it is at this point that nitrate of soda can render most valuable aid.

Further experiments are desirable to ascertain how far the crop is affected to the benefit of the grower by one application, or by several repeated at intervals of a week or more. Thus in addition to a complete manure (minus the nitrogen), 2 cwt. per acre of nitrate could be used at one dressing, the same amount divided into two dressings, and into three. Double the quantity could be used in the same way, and with one to which no nitrate was applied seven plots would be required, arranged in this way:—

1. Nitrate of soda at 2 cwt. per acre.
2. " " in two applications of 1 cwt. each.
3. " " in three applications of 75 lb. each.
4. " " at 4 cwt. per acre.
5. " " in two applications of 2 cwt. each.
6. " " in three applications of 150 lb. each.
7. No nitrate.

Of course these amounts could be in 200 lb. and 400 lb. instead of cwt.s. if desired; the results would not be materially affected so long as the proportion was observed. In any case the mineral manures should be applied much earlier, not later than January, while March or April, according to the season, would be the best for the nitrate. In much experimental work with vegetables the ordinary chemical manures are applied too late to be effective, and the conclusions often drawn are not only ill-founded but misleading. With a readily soluble and quickly-acting substance like nitrate of soda the matter is quite different, but there is ample room for enquiry as to whether a crop is most assisted by one strong stimulation or by several of smaller amount.

ASPARAGUS.

Mr. James Udale conducted some interesting experiments in the manuring of Asparagus from 1900 to 1903, to ascertain the comparative benefit of stable manure and artificials, and his conclusions were "that although stable manure gave the greatest average weight per acre, mixed chemical manure gave at all times the brightest and most tender 'heads' of Asparagus," and that "a combination of animal manure and mixed chemical manure will give better results in quantity and quality than either is capable of separately." The observation respecting the influence exerted by chemical manures on the quality of the produce is interesting and important, but the matter is worthy of further investigation. In my own work I have found the chief point was to stimulate growth at the right time with suitable nitrogenous salts, and I have to that end used nitrate of potash, nitrate of soda, and sulphate of ammonia, the results being practically in the order they are named. Except on a small scale, the first is too expensive for general use, and the last is slow in its action. A comparison of the effects of the above and other nitrogenous manures would be valuable, and a good series of experiments could be founded upon that basis, with both stable manure and phosphoric and potassic manures in addition.

Dr. Dyer found that the effects of common salt in conjunction with and in comparison with stable manure at 25 and 12½ tons to the acre were "inconsiderable," a result that accords with my own experience; in fact, the advantage so often claimed for salt as a dressing for Asparagus is in many cases imaginary.

In the Hadlow experiments the effects of potash and nitrate of soda were specially studied, and the influence of the former was very marked, an increase of 240 bundles (50 heads each) being secured in one case where potassic manures were employed. Kainit was the form used, which of course is a mixture containing a good deal of common salt, and though sulphate of potash was used in many of the other experiments in the later years (1 cwt. of the sulphate taking the place of 4 cwt. of kainit), I do not know if this was used for the Asparagus. The only sources of potash I have employed for this crop are wood-ashes and sulphate of potash, and I have never obtained results corresponding to Dr. Dyer's, any increase, wherever noticeable in degree, being due to the nitrogenous manures already mentioned.

More experiments in connection with this crop would be useful, and it would be interesting to have one in which water only was supplied when growth was commencing. The difficulty about that is it could only be effective in a dry season when the manures would be at a great disadvantage, and a comparison with previous or succeeding seasons would also be difficult. In isolated cases I have had ample proof of the effects of water judiciously applied, either alone or containing small proportions of soluble nitrogenous salts, and the return more than paid for the labour incurred. *R. Lewis Castle.*

(To be continued.)

* *Bowkeria triphylla*, Harvey, *Thesaurus Capensis*, i., 24, t. 37.—"A glabrous, sub-glabrous, or pubescent shrub or tree; branches virgate, pale reddish-buff, somewhat trigonous towards the apex, leafy; leaves mostly ternate, oval-lanceolate, apiculate, rounded or obtuse at the sessile base, serrulate, somewhat or scarcely rugose above, pale, resinous-dotted, nerved and veined beneath, 2–4 in. long, ¾–1½ in. broad; cymes subterminal, 3 flowered, bracteate; common peduncle 1–1½ in. long; pedicels ¼–¾ in. long; bracts ovate, acute, scarious, deciduous, ¾–1 in. long; flowers about ¾ in. long by ½ in. broad; calyx-segments shortly acuminate, acute, exuding viscid resin, ½ in. long; corolla more than twice as long as the calyx, egg-shaped; upper lip vaulted, with a flattish, narrow limb, bifid at the top; lower lip pouch-like, with a deeply 3-lobed limb; ovary 2–3-celled; style ½ in. long."—Hiern, in *Thiselton-Dyer, Flora Capensis*, vol. iv., sect. 2, p. 229 (1904).

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × ROLFEI SUPERBUM.

This handsome hybrid between *C. bellatulum* and *C. Rothschildianum* received an Award of Merit when shown by the raiser, W. M. APPLETON, Esq., of Weston-super-Mare, at the Royal Horticultural Society, August 13, 1901. At the last meeting (November 29), M. C. Beranek, of Paris, received a similar award for the variety illustrated.

As may be seen by reference to the illustration (fig. 171), the hybrid is markedly intermediate between the parents. The flowers are white,

purpose. *Cypripedium*, *Epipactis*, *Cephalanthera*, *Sturmia*, &c., require a certain amount of care.

All tuberous species from temperate and cold regions thrive if planted during their resting period, when the tuber is stored with nutritive matter for the plants when they begin their annual growth. Many of these plants have pretty and fragrant if not conspicuous blossoms, and from late spring to July are very interesting for lawns, plantations, copses, and other places.

Orchis maculata throws up tall spikes of bright carmine flowers; *O. pallens* and *O. sambucina* are yellow; while *O. bifolia* and *Spiranthes* are white.

ground in firm soil with no manure, but in turf if possible, as this keeps their roots cool. Terrestrial Orchids dislike richly-manured earth (with the exception of species with palmate tubers), but need a firm, compact soil. The tubers may be put in the border, in the crevices of a rockwork, or on the edges of a shrubbery, though in these cases the soil should be covered with moss. Most species prefer lime, and this should be remembered when planting in a clay stratum. From the growers' point of view there are four classes of tuberous Orchids:—

1st. Those from fields and pastures that will thrive in lawns and paddocks. This group includes *Aceras anthropophora*, *Anacamptis pyramidalis* (both sun lovers), *Gymnadenia conopsea* (anywhere), *Himantoglossum hircinum* (partial shade), *Listera ovata* (shade), all the species of *Ophrys* (dry and sunny place, and tubers deeply buried), *Orchis Bivona* (sun), *globosa* (partial shade), *mascula* (cool and partial shade), *militaris* (light, sandy soil, cool but not damp), *morio* (sun), *pallens* (partial shade and light soil), *papilionacea* (sun), *provincialis* (sunny and dry), *sambucina* (flowers yellow, white and brownish-red, needs partial shade), *simia* (dry and sunny), *tridentata*, *ustulata* and the *Serapias* (all needing sun and heat).

2nd. Woodland species, which should be planted under trees in light, well-drained soil, that their roots may deeply penetrate—*Aplectrum hyemale*, *Cephalanthera* and *Epipactis*, *Cypripedium* (though these really form a distinct class), *Listera*, *Orchis fusca* (needs deep earth), *O. maculata*, *Platanthera bifolia*, *chlorantha*, and various American species, *Habenaria*, &c.

3rd. Bog-plants that require sphagnum:—*Arethusa bulbosa*, *Bletia*, *Calopogon pulchellus*, *Calypso borealis*, *Gymnadenia odoratissima*, *Hermannium monorchis*, *Liparis*, *Malaxis*, *Orchis coriophora*, *incarnata*, *latifolia*, *foliosa* (very hardy), *laxiflora* (very fine), *palustris speciosa*, *Pogonia*, *Spiranthes*, &c.

4th. This group includes the more tender terrestrial Orchids, mostly mountainous species; these should be in the alpine or bulb garden or in pots. They include *Chamorchis alpina* (peat and sphagnum and sunshine), *Coeloglossum viride*, *Goodyera*, *Gymnadenia albida* and *cucullata*, *Listera cordata*, *Microstylis*, *Nigritella*, *Orchis pinetorum*, *lactea*, *saccifera*, *sancta*, various American *Platanthera*, and *Habenaria*.

In transplanting Orchids from their habitat, it is better to wait until the resting season, when the new tuber is ripe. The are always two tubers face to face—the old tuber, shrivelled after producing flowers and roots, and the young one, which is forming and growing. When this is fully ripe it contains the entire future plant, concentrated as it were, and so preserves it until autumn, when the sap moves and the roots begin to form. It is then that the tuber may be moved and replanted, exactly as are those of Daffodils and Tulips. *Henry Correvon, Floraire, near Geneva.*



FIG. 171.—CYPRIPEDIUM × ROLFEI SUPERBUM.

Beautifully marked with dotted purple lines. It is evidently a robust grower, and freely produces its flowers. The plant has passed into the collection of Francis Wellesley, Esq., Westfield, Woking.

HARDY TERRESTRIAL ORCHIDS.

In England, where bulbous plants are often allowed to grow in grass, certain tuberous Orchids might also be used, especially as they thrive in almost any soil, and bloom in May and June when the Daffodils and Squills are over.

We have been very successful this year at Floraire with species of *Orchis* and *Ophrys* planted in lawns, as they flowered well. Tuberous-rooted varieties are most suitable, as these with fasciculated roots are more difficult to manage. *Neottia*, *Corallorrhiza*, *Epipogon Gmelini*, *Limodorum abortivum*, &c., are not adapted for the

Some bear closely-set racemes, such as *Nigritella angustifolia* (which bears brownish-chocolate vanilla-scented flowers), and *O. globosa*, *O. pyramidalis*, &c., while others put forth loosely-hanging clusters of blossoms. Among the hardy terrestrial Orchids, *Cypripedium*s and *Calypso* bear solitary blossoms. With others the spikes are more or less densely set, according to the species and age of the plant. We have here some old roots of *Himantoglossum hircinum* which bear from sixty to eighty flowers on a stem, whilst the younger ones have but from ten to twelve. *Orchis morio* has generally but few; but *O. maculata* and *fusca* bear a larger number of flowers.

But I must pass on to describe how we cultivate them successfully at Floraire. Open-air culture or pot culture we find best. All ordinary species from the meadows will grow in the open

KEW NOTES.

BARBERIA FLAVA, Jacq.—A good batch of this free-flowering Acanthaceous shrub is now making a bright show in the Begonia-house. It is quite an old garden plant, and worthy of extensive cultivation, for its bright yellow flowers make a pleasing display during the months of November or December. Grown on for several years, it makes a well-branched shrub 2 to 3 feet in height; though a useful sized plant is one of a single season's growth, which flowered in a 6-inch pot, as illustrated by the plants under notice. They are about 1 foot high, having three to five stout branches, with rather leathery leaves some 6 inches in length by 2 inches broad, each surmounted by a dense four-sided, pyramidal head of clear yellow flowers having a diameter of

1½ inch. The plants were grown from cuttings rooted in May, and being vigorous growers they were potted direct into small 48's from the cutting-pots, afterwards into 6-inch pots. They should be rooted-in over bottom-heat, and cultivated in an intermediate temperature until they are established in the pots in which they will flower, after which time they may be grown in a cool-house. The shoots need to be pinched once or twice when the plants are in full growth. The species is a native of Tropical Africa.

DENDROBIUM COMPACTUM, Rolfe.

This is a charming new species from Yunnan; it belongs to the type of Dendrobiums which might be termed "miniatures," such as *D. Diodon*, *D. strongylanthum*, and *D. alpestre*, to which latter species it is closely allied. The plant now in flower was sent to Kew at the end of last year by Madame Louise de Hemptienne, of Ghent, as Dendrobium species. Mr. Rolfe at once found it to be a new species. The pseudo-bulbs are from 1 to 4 inches in length, about ½ of an inch in diameter at the base, gradually tapering upwards; each has usually two or three linear leaves 1 to 2 inches in length, ½ of an inch broad. The flowers are produced on slender, almost erect lateral and terminal racemes, carrying from six to twelve rather small, Polystachya-like flowers. The sepals and petals are pure white, linear-acuminate in form; the lip is nearly the length of the sepals, and light-green in colour. It is an exceedingly pretty and interesting species, but not one that is likely to be of any horticultural value. *W. H.*

FOREIGN CORRESPONDENCE.

AMERICAN APPLES OF HIGH QUALITY.

THE recent publication in the *Gardeners' Chronicle* of a select list of Apples for planting in Britain has been of considerable interest to the readers of your journal in America. The interest, however, is entirely on the outside, for in this country the recommended list would be of no use whatever. The majority of the varieties receiving the highest number of votes are practically unknown in America. This applies to Cox's Orange Pippin, which stands at the head of the list, but which in this country can be found only in a few large collections, though I believe it is sometimes grown in Nova Scotia. The variety of the British list best known in America is Ribston Pippin, which indeed is sometimes commercially grown and shipped to England, and which is always regarded as a variety of merit, even when it is known to be unprofitable.

In our much larger country, with its greater diversity of climate, soil, and market, it would be impracticable to make up such a list by voting as that secured by the *Gardeners' Chronicle* for Britain. Nevertheless we have several varieties of Apples in this country which we recognise as the leaders. In fact we have two sets of leading varieties; the first set includes those which are profitable commercially, such as Baldwin, Ben Davis, Fameuse, Rhode Island Greening, York, Imperial, &c. For the most part these are not varieties of the highest quality, it having been demonstrated in the most indisputable manner that high quality is not one of the qualities most important for commercial success.

There is another set of varieties in this country, however, not so often heard of in England, which are looked on as good Apples. Esopus Spitzenburg is one of these, and is a truly American Apple of the highest dessert quality. It is of small or medium size, beautifully red in colour, with richly coloured flesh, a delightful aroma, and a flavour which leaves nothing to be desired. Unfortunately the tree is a poor grower and much subject to disease.

The Newtown Pippin is generally regarded as an Apple of high rank in the dessert list, but the large bulk of Newtown Pippins grown in this country are sent direct to British markets. The Apple is really better known in Britain than in America.

Northern Spy is probably the most successful and the most widely known of our Apples of high quality. Except that the tree is slow about coming into bearing, a light cropper, and fastidious as to soil, Northern Spy has all the characters of a market variety in addition to its high quality. At its best it is a magnificent Apple. The fortunate eater of a first-class Spy has an opportunity to see how really inferior most of the simply good Apples are.

Amongst American Apples of superior quality there should be named also Mother, Peck's Pleasant, Grimes' Golden, and Winesop. There are several others which would be admitted to the first rank by different judges, for this is largely a matter of personal opinion. We are often sorry, though, to think that our pomological cousins in Britain are forced to judge our fruit-growing by the Apples which circumstances compel us to ship abroad, instead of by some of the really fine fruits which we sometimes enjoy amongst ourselves at home. *F. A. Waugh, Mass.*

POTATOS.

THE VARIETY SIR JOHN LLEWELYN, AND OTHERS.—To suggest that this variety is but the old International Kidney is really ridiculous. With me, Sir J. Llewelyn is one of the best, if not the very best, Potato for early supply that I have yet found, either for cultivation in frames or the open borders, being quite as early as any other that I have tried, and I try most varieties, whether early, second early, or maincrop. The quality of the tubers on our soil leaves nothing to be desired. We have used young tubers of it during the royal visit here at the end of November, and it has been pronounced "quite a delicacy." As Mr. Dean wrote, "its tubers are very diverse, its quality far superior, its tops quite distinct" from International Kidney, whether the old or so-called "improved" type. In regard to quality, I consider International Kidney and Up-to-Date two of the very worst Potatoes that were ever introduced, though Up-to-Date has been grown in this district for the last few years by the hundreds of thousands of tons, principally on account of its heavy cropping qualities and its suitability for "chipping" purposes. International Kidney in its day was grown almost as extensively, but only lasted a very short time. My impression is that Up-to-Date will ere long have to give place to others, as I hear complaints of considerable quantities of diseased tubers being found since the "holeing or pitting" of the tubers.

If the quality of Findlay's Eldorado should prove equal to its cropping and disease-resisting qualities, I think that it will become a very popular variety in this district on account of its shape—pebble or kidney shape being mostly favoured by the farmers as suiting the requirements of the chippers. I purchased in March last from Messrs. Pond, of York, a tuber of Eldorado 1 oz. in weight, for which I paid £10. From this tuber I got nine sprouts, which were potted into 60's and grown-on in a cool greenhouse or pit. (I could, of course, have got many more plants by propagating the tops, but am not a believer in this method, which I contend goes far to weaken the constitution of a Potato.) These nine plants were planted on a south border early in June, and were lifted early in November. The heaviest root produced 16½ lb. of tubers, and the smallest 4½ lb., the total weight from the nine roots being 63 lb. of tubers without the least sign of disease.

I have read during the present autumn many opinions for and against the celebrated variety Northern Star. My own experience of this variety is most satisfactory. From a little over a statute acre I have lifted what I estimate to be about 25 tons, grown under ordinary field culture. Its cropping qualities are very great, but there was some little trace of disease. Its cooking qualities my employer declared to be excellent, with which verdict I am in agreement.

Sutton's Discovery yielded a fine crop, though a long way behind Northern Star, but free from disease. Out of over eighty varieties grown here (amongst which were thirty of Messrs. Fidler's seedlings, including some splendid varieties), those I have named are the best. *Ben Ashton, Lathom Park Gardens, Ormskirk, Lancs.*

TREES AND SHRUBS.

CRATÆGUS HETEROPHYLLA.

THIS useful Thorn is not so much planted as it deserves to be, for it possesses several valuable characters. In the first place it endures remarkably well the conditions prevailing in most town parks and gardens; secondly, the foliage and flowers are produced very early, and the latter very freely; thirdly, the deep-red fruits, though small, are so abundant that they have a fine effect. It is seldom that a tree early to form its leaves also retains them late, yet this is the case with the *Cratægus* under notice, for in some of the London parks specimens can be still seen (November 6) in full leaf, while nearly all other Thorns are quite bare.

The habit of the tree is sturdy and compact, the leaves are variable in form, some partaking of the common Hawthorn characters, while others are peculiarly drawn out at the base (cuneate), and only cut at the apex. By some authors *Cratægus heterophylla* has been regarded as a possible hybrid between *C. Azarolus* and *C. oxyacantha*; others have placed it as a variety of those species, but it is now ranked as a distinct species. Loudon, who gives a good illustration of the foliage and fruits, says: "Native country uncertain—probably South Europe;" while the *Kew Hand-List* gives the rather indefinite "Orient" as the place of origin. *R. L. Castle.*

SPIRÆA BILLARDI.

Under this name Mr. Joseph Meehan mentions and figures in the *Florists' Exchange*, November 19, a shrub bearing its pink flowers in finger-like spikes. We do not know the name, but Mr. Meehan says it has been suggested that it is a form of *S. salicifolia*. The most vigorous blossoms come, he tells us, from winter-pruned specimens, or those which have been cut back nearly to the ground. We do not find the name in Nicholson, nor in the *Kew Hand-List*, but in the *Cyclopædia of American Horticulture* it is mentioned as a hybrid between *S. Douglasi* and *S. salicifolia*.

LAURELIA AROMATICA.

Mr. F. W. Moore, of Glasnevin, kindly sends us a specimen of this noble Chilean evergreen from the gardens of Mr. Acton at Kilmacurragh, co. Wicklow. The plant is over 30 feet in height and is perfectly hardy in that part of Ireland, and is therefore presumably so in other milder parts of the British Isles. The leaves are opposite, very shortly stalked, elliptic, tapering to each end, coarsely toothed, thick and fleshy, deep green above, paler beneath, studded with minute translucent dots like those of a myrtle, and having a delightful aromatic fragrance. The flowers are unisexual and apparently dioecious, but of this we are not sure; at any rate several of the carpels bore perfect seeds, so that male flowers must have been not far off. We trust seedlings may be raised at Kilmacurragh. The flowers in our specimen were

withered, but the fruiting perianths were placed two or three together in the axils of the leaves. These tubular perianths or "receptacles" are somewhat pear-shaped, and ultimately split into three or four oblong valves bearing ligular scales or

of the receptacle which when dry spread widely, are firmly closed in moist air or in water, as noted by Mr. Worthington Smith, and the hairs are erect, but when the carpels are liberated the hairs spread more or less horizontally.

not actually, is similar to that of some Urticaceæ, such as *Dorstenia*, and has even a superficial resemblance to the husk of the Beech-mast or of the Sweet Chestnut. In reality the real nature of the structure is different. It is no wonder, then, that the affinities of the plant are the subject of differences of opinion. Be this as it may, these on the look-out for a delightful and fragrant evergreen should make a note of this shrub.

NURSERY NOTES.

A ROCK-GARDEN IN OCTOBER.

This year, for some reason or other there was an unusual wealth of flowers in the rockery; at least that was the impression conveyed during a stroll round the rock-garden and alpine quarters in Messrs. A. Bee & Co.'s nursery at Ness, in Cheshire.

The first subject to attract the eye was a *Dianthus* named "Princess May," a vigorous form with bright rose-pink flowers of a large size and healthy-looking "grass" on which was a beautiful bloom. I do not know the parentage of the plant, but apparently there is *Caryophyllus* as well as *plumarius* blood concerned. Close by in fine contrast was *Convolvulus mauritanicus*, that fine North African "Bindweed" whose trailing growths hanging down the face of the rocks were still thickly covered with beautiful deep blue flowers. This plant, although very valuable as a greenhouse subject, is quite hardy in all except the coldest localities, if given a position where the roots will be free from stagnant wet in winter. More effective than the last-named was a mass of the Dalmatian Bellflower, or rather a larger form of it, which is usually catalogued as *Campanula muralis major*, in lieu of the more correct if more unwieldy *C. Pertenschlagiana major*. The bright blue flowers of this were still freely produced.

Crevice in the rocks, spaces between the stone steps, as well as larger areas, were filled and made beautiful by several Burweeds, the gem of which is undoubtedly *Acæna microphylla*; though past the flowering stage, which is indeed inconspicuous, this little gem was strikingly attractive. The wee bronzy leaves closely hugging the soil were surmounted by innumerable small heads of crimson and bronze spines, on which the dew glittered like diamonds amongst rubies and tarnished gold. In contrast was the pea-green *A. Buchanani*, while the khaki-coloured *A. inermis* was not without charm. Other dwarf plants suitable for hiding stones are *Arenaria balearica*, then of a true emerald hue, and minus the tiny white flowers which star the surface in the early summer. In a shady corner this gem will run over the face of sandstone rocks so closely as to leave the contour of the surface plainly visible. *Veronica canescens*, almost as dwarf, will cover with similar pertinacity any moist surface of a sandy nature, and gives the impression that pale blue flowers have been scattered by some wanton hand over the quiet grey carpet of leaves, so closely do they lie. *Hypericum humifusum*, lately a mass of pale gold, is now a lovely green. *Lithospermum prostratum* is rarely without a flower the year round, but this mild October induced quite a profusion of the almost gentian-blue flowers to open. In a similar position on the wall is the evergreen Snapdragon, *Antirrhinum sempervirens*, whose white flowers with pale yellow palate help to brighten the same, as also do those of *A. asarina*. Covering a great space with a mass of pink flowers was the *Polygonum vacciniifolium*, Whortleberry-leaved Knot-weed. (Surely advocates of a system of English names for all plants will hesitate before adopting such as this.)

Glaucium flavum tricolor was still giving off its bright mahogany-red blooms. Such a free-



FIG. 172.—*LAURELIA AROMATICA*: HALF-HARDY EVERGREEN.

Spray natural size; beneath it to the left an unexpanded flower, magn. 2 diam.; in the lower row to the left an expanded flower; in the centre a detached carpel, magn. 3 diam.; to the right a vertical section through the flower, showing the attachment of the carpels; above this a carpel seen in vertical section with a solitary ovule.

abortive stamens on their borders, and lined with long, brownish, simple hairs. On these valves are placed a number of carpels—the real fruits, each ovoid, with a long unbranched style, and densely covered with long brownish hairs by means of which the fruits are scattered by the wind. The ovary has a single cell and a single seed with a hard whitish perisperm. The valves

The tree is a member of a very curious natural order, Menispermaceæ, representatives of which are not common in gardens.

In appearance as in fragrance the shrub is like the Bay Laurel, *Laurus nobilis*; the stamens also are described as being like those of Laurels, but the curious receptacle or perianth-tube is like that of *Calycanthus*, and outwardly, though

blooming plant is it that the numerous long seed-pods made quite a thicket above the silvery foliage, which unfortunately dies down with the approach of winter. When sheltered from rough winds, and protected from the severe frosts in cold localities, *Saxifraga Fortunei* thrives outdoors, and at this season gave its handsome spikes of white flowers; singularly quaint and pretty individually, on account of the great size of the two lower petals and the pleasing contrast of the white petals and cinnamon-coloured anthers. *Linaria alpina* and the rare variety *rosea* had still quite the atmosphere of spring about them, as also had the Prophet's Flower. *Arnebia echioides*, whose lemon-yellow flowers, with the dark spots which fade as the flower gets older, had been freely produced since April, and there were still more to open. *E.*

PROPAGATION OF POTATOS.

AMIDST all the discussion which has arisen over Potatos, their cropping and merits, and not least the enormously enhanced prices asked for certain new ones, reaching to a point of sensationalism, the influence likely to be exercised over Potato-constitutions and their future robustness by the adoption of the practice of propagating plants by means of sprouts and cuttings has been largely overlooked. Whether the fears widely felt that this somewhat artificial system of propagation is likely to result in serious constitutional deterioration be justified or not, in any case such anticipations are natural, because the practice of raising new varieties from seed first, then increasing them solely by ordinary tuber-propagation has been general, and the other methods very seldom applied. That these fears have not been restricted to a few interested in Potatos is certain. Growers in many directions have held the same belief, and, whether rightly or wrongly, long experience in normal methods have made such belief justifiable. It does not necessarily follow that sprout or cutting propagation naturally produces deterioration. We employ similar methods of increase in relation to other plants with great freedom and without injury to their constitutions. The Dahlia, which has fleshy, tuberous roots, has been propagated by means of cuttings for generations, and there is no reason to assume that it suffers constitutionally for that reason any more than does the Rose, which is increased habitually by mere wood-buds, or fruits which are propagated by millions in the same way. A fear that certain methods of propagation applied to Potatos because they are uncommon will lead to deterioration, though natural, must have, after all, a more substantial basis, and that basis can only be established or be destroyed by practical experience.

A few months since, in these columns reference was made to a series of experiments in sprout and cutting propagation of their fine variety, Discovery, conducted by Messrs. Sutton & Sons, of Reading, at their seed farm. When first seen, after a few weeks' growth had been made, small diversities of strength were noticed. Later, on seeing the breadth of plants twice, the growth of all had become materially equalised. The plants remained vigorously green to a very late period in the autumn, seeming to defy disease-spores. It was most interesting to see a breadth of some 2,000 propagated plants, literally green as grass, as late as October 7, when all other Potato-tops were decayed. Some of this greenness was doubtless due to the variety, and some to the method of propagation.

Early in the spring a quantity of Discovery tubers were, in accordance with newer practice, set up in shallow boxes with soil, gently watered, then placed in moderate warmth. Growth soon followed, and batches of sprouts, when sufficiently

long, were pulled off and inserted in small pots singly, in which they soon rooted. There were three separate batches of such sprouts removed and rooted, and each batch labelled and kept separate. The object, and one perhaps which occurred to no one else, was to ascertain what influence the sprout exercised on tuber production, whether from first, second or third produce. The various plants were tested in scores, not near each other, and the results are as given in the table below, the first four tests applying to two diverse scores. It should be added, as shown in the table appended, that not only were three batches of sprouts removed from the tubers and rooted, but that the tubers after such treatment were also planted (No. 9), and even to the sprouts were removed and dibbled out-doors without being potted. The tests applied were most exhaustive. The four named varieties mentioned at the end of the list were plants in pots, purchased and planted with the Discovery breadth. The tuber results as presented show that the first sprouts give rather the best produce, although the second and third sprouts run the others rather close. It was remarkable that eyes cut from the tubers should have given such fair results.

The next test applied should be to select from the cutting-raised crop several dozens of good tubers, and an equal quantity of similar tubers obtained from ordinary tuber-planted plants of the same variety, and grow them side by side under similar conditions next year. Such a test would be particularly useful if applied to Eldorado, Northern Star, and some others also.

"DISCOVERY" EXPERIMENTS.

No.		gr. lb.
1	1st sprouts from the tuber	2 19
2	1st sprouts from the tuber	2 22
Very nice crop. Tubers in this section on the whole larger than in all those below.		
3	2nd sprouts from the tuber	2 12
4	2nd sprouts from the tuber	2 15
Probably as many tubers as last, but not so large.		
5	3rd sprouts from the tuber	2 10
6	3rd sprouts from the tuber	2 10
Very similar to the last, but tubers rather smaller.		
7	Eyes cut from the tuber	2 7
8	Eyes cut from the tuber	2 0
Distinctly weaker than any of the above. Note.—These eyes were taken from the tubers before the sprouts had grown.		
9	Whole tubers with 3rd sprouts left on	2 4
10	Cut tubers with 3rd sprouts left on	2 3
11	4th sprouts taken off and planted without being potted	1 22
Considering that these sprouts were not potted, but were planted straight into open ground, the results are very fair.		
12	Whole tubers after having 4th sprouts taken off	1 20
Individual tubers larger than in No. 11.		
13	Tubers cut in half, but 4th sprouts left on	1 24
Tubers rather larger than in No. 12.		
14	Whole tubers with 4th sprouts left on	1 26
15	Johnson's Diamond	0 6
Badly diseased.		
16	Sim Grey	0 2
Tubers all small, Badly diseased.		
17	Eldorado	0 1
Crop most disappointing. Diseased.		
18	King Champion	0 6
Fair crop. Some disease.		

A. D.

BOTANY OF N. S. WALES.—Mr. F. TURNER has reprinted from the *Proceedings of the Linnean Society of N. S. Wales*, his account of the flora of the south-west portion of N. S. Wales. Although it is not a century since that part of the State was a *terra incognita*, millions of sheep and thousands of horses and cattle are now fed on the indigenous grasses and herbage where the kangaroo and the wallaby were the principal herbivora before the advent of the white man. The total number of species enumerated is 727 dicotyledons in 282 genera; 212 monocotyledons in 89 genera, and 10 acotyledons in 8 genera, yielding a total of 399 genera and 949 species, the names of which are enumerated.

CHRYSANTHEMUMS.

SOME CONTINENTAL NOVELTIES.—After visiting the Paris and Lille Chrysanthemum shows last autumn it is a little disappointing to find that many of the most promising seedlings shown there are but poorly represented in our collections here this season. A few, chiefly Calvat's novelties, have been seen in the trade-growers' collections. In spite of enormous competition this eminent raiser must still be regarded as the leading Continental Chrysanthemum specialist. Of late years the English and Australian novelties have been distributed in large numbers, many of them being so uniformly good that they have taken the places of novelties from other sources which would otherwise have secured a foremost position.

We do not always see novelties at their best the first year of their introduction, and out of the 1903 set I have this year come across several that may be regarded as promising. *Mdlle. Alb. Bertrand*, a large Japanese variety, of a fine lilac-mauve colour, with paler reverse; *Souvenir de Père Calvat*, pure white tinted in the centre, outer florets lilac-purple; *Jean Calvat*, having very long florets of deep, golden-yellow tinted with reddish-crimson; *President Viger*, very large in size, with long florets having a white ground flushed with rosy-purple, reverse silvery; *Mdlle. E. Chabanne*, a deeply-built flower, and globular in form, colour pale rosy-pink; *Mdlle. Marthe Morel*, pure white, of medium size, with florets that remind one of an Endive; *Madame J. Perraud*, a large Japanese, close and compact, and of globular form, colour creamy-white; *M. Martignier* is a compact flower in form, the colour is a warm terra-cotta with the reverse of old gold tint; *Lieut.-Col. Ducroiset*, this I saw in fine form in France last year, and in numerous examples, but the only one I have seen this autumn in England was in Mr. H. J. Jones's stand at the Crystal Palace, and this was certainly a fine example. The same grower also showed several of those already mentioned, and *Mme. J. Chiffot*, a large white variety, which like all those mentioned were novelties sent out by M. Ernest Calvat last year. His 1904 collection ought certainly to provide us with some worthy examples of his raising, and I look forward with interest to those that have already bloomed for the first time in this country. *Amateur Conseil* is a very close and compactly built Japanese, flower of globular form, with rather narrow florets of a fine shade of carmine amaranth; *Nivose* is a Japanese of perfect form with drooping florets of a lovely shade of pure bright yellow; *Chrysanthémiste Montigny*, an immense flower of the Japanese type with incurving florets, which are grooved and twisted, colour pure pale primrose-yellow, a variety of excellent form; *Marquise Visconti-Venosta* has very large blooms of Japanese form, colour pure white; *Sapho*, this too is a large variety with broad florets, the colour is a shading of plum-coloured amaranth with silvery-reverse; *Mlle. Anna Debona* is a large snowy-white Japanese; *Roi d'Italie*, a grand incurving bloom with whorled florets, very narrow and pointed at the tips, colour rich deep canary-yellow; *Mme. Marguerite de Mons* is another fine novelty with rather narrow florets, colour pure white. Several of these 1904 varieties were staged in excellent form at the Crystal Palace Show by Mr. W. J. Godfrey, of Exmouth.

Among other large show flowers of Continental origin but from other sources are *Souvenir de Mme. Buron*, a fine pale yellow sport from Miss Elsie Fulton, and a noble incurved bloom of deep rich golden-yellow called *Emblème Poitevine*, which was awarded a First-class Certificate by the Floral Committee of the National Chrysanthemum Society at the Palace Show. *C. Harman Payne.*

THE VEGETATIVE LIFE OF THE RUST FUNGI OF CEREALS.*

IN the present communication the author points out that since the 'sixties, when De Bary made public his work on the life-history of the three common Puccinias parasitic upon the cereals of Europe, continued experimental researches have shown that these three species consist in reality of no fewer than twelve. He further indicates that De Bary's work, important and accurate as it was, deals with the three species then known as *P. graminis*, *straminis*, and *coronata*, in which he showed their relationship to the three common *Æcidia* on Barberry, *Anchusa* and *Rhamnus*. It did not afford an explanation of the manner by which in large areas of country the crops are simultaneously attacked by these rust and mildew parasites. He emphasises the fact so well known to those who study fungi in the field, that the area of infection does not extend much beyond 50 or 60 yards from a Barberry or Buckthorn bush. He further urges again that his hypothesis of a mycoplasmic symbiosis existing between the fungus and the host-plant explains the widespread dissemination of these parasites better than any other. His view is that this "mycoplasm" exists as a form of protoplasm between the cells of the host, which can be demonstrated in those varieties of Wheat that are specially subject to the parasite, as soon as the first green leaf appears above ground. That this mycoplasm lives symbiotically in the tissues of the plant until such time as favourable conditions, climatic and other, cause it to pass into the typical mycelial stage for which the spore-beds of the Uredo are formed. If this can be shown to be the case, an explanation of those sudden and widespread outbreaks of Wheat-mildew which sometimes occur in England and the annual decimation which Wheat-rust causes in Australia and other countries become explicable, and, what is of infinitely more importance, it would give us a clue as to what lines on which we should fight the disease.

The hypothesis is by means an unthinkable one, but its mere plausibility must not make us accept it. In the first place it is new, and we cannot cast off our old views at a moment's notice. Then again we have seen the mycelium, but we have not—most of us, at any rate—have never seen this mycoplasm. Eriksson has selected for its demonstration certain varieties of Wheat which are year by year affected in Sweden with *Puccinia glumarum*, notably Horsford's Wheat. Some of it was sown in October, 1902, and when the seedlings had attained a height of 35 or 40 mm., which was in twenty-three days from the date of sowing, a portion of the first green leaf of one of them was examined. Various fixing solutions were employed in these experiments, such as Flemming's chrom-osmium-acetic acid, Herman's platinumchloride mixture, absolute alcohol, &c.; while for stains Flemming's safranin - gentian - violet - orange, and fuchsin-methylgreen were made use of.†

The accompanying figure (fig. 173 [A]), reproduced from Eriksson's plate 1, fig. 2, *b*, shows what he saw. A cell of the host-plant whose nucleus has stained red is filled by protoplasmic material, in which two large vacuoles are seen one above the other below the nucleus.

Plate 2 (fig. 173 [B]) shows three cells from a little older seedling (forty-four days after sowing), in which the second green leaf was unfolding. The

upper cell is seen to be filled by protoplasm, the middle half filled, and the lowermost quite devoid of it. Many hundreds of sections have been cut by the authors, of which only a certain number show the mycoplasm present. When present, it is found to fill more or less of the lumen of the cells, and to contain granules, which are coloured pale-violet by Flemming's reagent, and dark blue by Heidenhain's. Eriksson regards it as being something intermediate between ordinary protoplasm

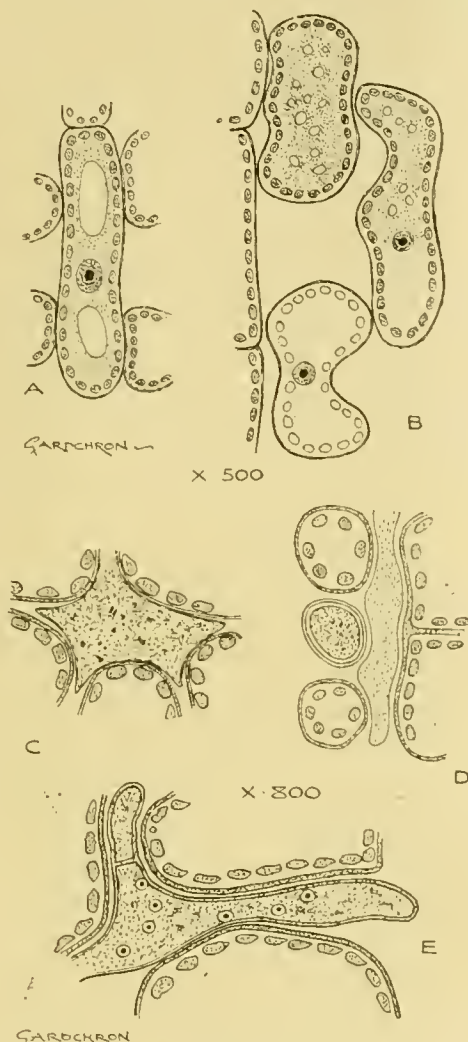


FIG. 173.—A TO E, SHOWING THE MYCOPASM FROM ERIKSSON'S FIGURES, TAB. I.—III.

A—Tab. i., f. 2, *b*.—Cell of Wheat seedling with mycoplasmic contents containing two vacuoles.

B—Tab. i., f. 5.—Three cells of little older seedling, showing one cell filled with mycoplasm, another partially filled, and the third quite devoid of it.

C—Tab. ii., f. 11, *c*.—Mass of mycoplasm between the cells of wheat leaf in the month of July, taken from the periphery of an area containing sori of *Uredogluarum*. About 4–6 mm. beyond the outer sori, the mass fills the interspace between five cells and is sending prolongations between them.

D—Tab. ii., f. 11, *a*.—Extension of plasma between the cells, granular contents more obvious, including membrane scarcely apparent.

E—Tab. iii., f. 14.—Further stage, the mass of mycoplasm has become invested with a distinct membrane, of which the double contour is apparent; one septum has formed. Clearer area is seen around some of the larger granules.

and typical fungus - protoplasm. Sections of leaves from plants of *Bromus inermis* and *Festuca arundinacea*, which have been under observation for many years, and which had had no Uredo upon them for certainly the last ten, showed no mycoplasm. Neither could it be found in those varieties of Wheat which are seldom attacked by Uredo *glumarum*, notably Bart Trimenia, Medeah, and Madonna.

The existence of a fungoid parasite on the tissues of its host in the form of a plasma is not a new fact, or one confined to the cereal Uredines.

The well-known instance of *Plasmodiophora* will at once suggest itself. *Pseudocommis*, again, about which such a copious literature has sprung up during the last few years, affords another instance. With this, however, it has been suggested some of these bodies may be products made by the action of the reagents employed, and that they are tannin and derivatives. Still, whatever may be the case with *Pseudocommis*, which for the most part occurs late in the life of the cells of the plant, one would hardly expect to find tannin in the first green leaf of a cereal.

More recently, Zukal speaks of finding "amœboid plasmodic bodies" in the cells of living Barley-leaves, in his work on the Rust-diseases of the cereals of Austria-Hungary, as quoted by Eriksson. The observations of René Maire, in the *Bulletin de la Société Mycologique de France*, 1901, with regard to the life-history of *Endophyllum sempervivi*, are also to the point.

With regard to *P. glumarum*, no mycelium is developed until the following summer, in the month of July, when the Uredo spores are formed. Sections taken from an affected leaf 4 to 6 mm. beyond the most external spore-bed, on a leaf, and treated in the same manner, show the mycelium to consist at first of masses of granular protoplasm between the cells of the plant (fig. 2, t. ii., f. 11, *c*). From these masses outgrowths take place which force their way among the cells (t. ii., f. 11, *a*). At first the granules are very small, but they soon increase in size. These elongated masses become invested by a very delicate membrane which thickens and eventually acquires a double contour. Septa now appear, and some of the granules become surrounded by a clearer area. These changes are shown by t. ii., f. 11, *a*, where an elongated mass is seen extending between the cells. T. iii., f. 14, shows a later stage, in which a double contoured membrane has invested such an extension. The granules are larger, many of them surrounded by clearer areas, and septation has commenced.

More recently (*Comptes Rendus*, July 4, 1904), Eriksson has confirmed the above results with two or three species, viz., the crown rust of Rye (*P. dispersa*), and the yellow rust of Barley (*P. glumarum* f. *Hordei*). With these he finds an extension of the plasmic masses takes place not only between the cells of the host plant, but, like other forms of protoplasm, it often occurs from cell to cell through the normal openings which exist in the cell walls. Thus those endo-haustoria are produced in the cells, which he has designated "special corpuscles." The fact that a parasitic fungus can exist in a protoplasmic form in the tissues of its host and only develop mycelium and spores under certain conditions of environment is an extremely important one and one which will explain some of the unsolved mysteries connected with the life-history of the Potato disease, not to mention other epidemic plant diseases. That the subject is one worthy of study is shown by the fact that our distinguished Vice-President, Professor Marshall Ward (than whom no one is better able to elucidate the whole question), has undertaken a series of investigations with regard to it. Charles B. Plowright, M.D., Kings Lynn, September 14, 1904.

EUROPEAN ORCHIDS.—Under the title of *Abbildungen der . . . Orchideen - arten*, Messrs. FRIEDLANDER & SON, of Berlin, have issued a series of sixty coloured plates by WALTER MÜLLER, representing the wild Orchids of Central Europe, with descriptions in German by Dr. KRÄNZLIN. The representations are very faithful, and as they comprise almost all of our British kinds, as well as the hardy terrestrial species generally cultivated, the book will be very serviceable to cultivators, as the coloured plates appeal to readers of all nationalities.

* Recent Researches on the Vegetative Life of the Rust Fungi of the Cereals, by Dr. Jakob Eriksson. Read at the British Mycological Society's meeting at Whitby on Friday, September 16, 1904.

† *Über das vegetative Leben der Getreiderostpilze*, Jakob Eriksson. I. *Puccinia glumarum* von Jakob Eriksson und Georg Fischer mit drei farbigen Platten; 4to, 1904. Stockholm: P. A. Norstedt & Sons, London: William Wesley & Son, 28, Essex Street, Strand.)

† The various solutions are given in the paper, p. 7.

THE PERIOD OF DECADENCE.

THE floral beauties of our gardens are rapidly disappearing; yet all the more on this account do we value those plants that persistently flower on the confines of winter, as if they were endowed with the spirit of everlasting youth. In Scotland at least the beginning of the winter season is not usually severe, mild atmospheric conditions prevailing till the close of the year; thus we have a protracted season of garden-bloom. Many of the finest of what may be termed the intermediate Chrysanthemums, not so impressive in their dimensions as their giant contemporaries grown carefully under glass, yet capable in many instances of almost equally artistic effects, are at present (November 15) in marvellous flower; and in my own garden they have a graceful environment of Dahlias and late-blooming Gladioli, among the former, Mrs. Edward Mawley, Keynes' Double White, Gloriosa, and Red Rover being especially effective.

Oriental Lilies have had during the past season what the Italians call "bel tempo"—an excellent time. They have had as much sunlight and moisture as they required and therefore they attained to quite unusual dimensions.

A large number of the auratum and speciosum flowered very late, the last blooms disappearing about November 8. The latest of all were *Lilium speciosum roseum* and *L. s. Kraetzeri*, two of the most precious varieties of this richly-fragrant species, and the extremely large, faintly-spotted auratum *platyphyllum*, whose loveliest derivative is the almost pure white *virginale*, one enormous flower of which I had about a month ago nearly 13 inches across. I think it is a great pity that in many English districts such magnificent Lilies, probably for lack of adequate moisture, cannot be grown. Mr. Harry J. Veitch tells me, in a recent interesting letter on floral subjects, that he can do little with them (at least of any consequence) at East Burnham Park, in beautiful Buckinghamshire, while at Mr. William Paul's nurseries at Waltham Cross they are decidedly out of correspondence with their environment. Even here, where such splendid Lilies as *Henryi*, *Szovitzianum*, *chalcidonicum*, *giganteum*, *auratum*, and *speciosum* are so invariably successful in favourable seasons, there are others of a somewhat more delicate temperament or more capricious character which flower well for one season and then wholly disappear. Such, for example, are *Lilium Browni*, doubtless impressive, but extremely sparing of its flowers. This species seldom abides with me for more than two years, and would, therefore, require to be treated like a biennial; *Lilium Kramerii*, found at a high altitude among the mountains of Japan, and which I have discovered requires a well-drained soil; and *Lilium rubellum*, a dwarf Lily, with pink-coloured flowers, also of Japanese origin, and even less reliable, as I know from sad experience, than *Lilium Kramerii*. One of the finest of all Lilies for garden decoration is *Lilium candidum*, which is, however, in many regions soon annihilated by disease. In the gardens at Logan House in this sequestered sea-girt parish, it has been of late years exceptionally fine. Planted by Mr. McDonald among pink and crimson Roses, the Madonna Lily had a memorably beautiful effect.

Several of my finest hybrid Teas and hybrid Perpetuals are still making the most heroic efforts to bloom. Conspicuous among these are Bouquet d'Or, Frau Karl Druschki (one of the grandest and most reliable of all Roses), William Allen Richardson, Captain Hayward, White Lady, Anna Olivier, Madame Pierre Cochet, and Clara Watson, still flowering with facility on a warm west wall. David R. Williamson, November.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Light requisite during winter.—During the winter months it is necessary to admit as much light to the plants as is possible. Therefore advantage should be taken of mild weather to thoroughly wash the houses inside and out. At the same time the plants should be examined for insect pests, and the foliage cleaned with tepid rain-water. Wash the pots, staging, &c., and whitewash the walls, because a white clean surface increases the light in the houses. Whilst rearranging the plants it is advisable not to place any of them too near the roof-glass, or some may get chilled during very cold weather. Some Orchids succeed well when almost touching the glass, but the majority are far better if placed 18 inches or 2 feet away from the roof.

To keep the atmosphere moist.—We have already had severe frosts, and the large amount of fire-heat which such weather renders necessary is not altogether advantageous to the plants, and its drying effects should be counteracted as much as possible. Let each house be given a thorough damping-down in the morning, immediately the temperature commences to rise to the proper degree, and at the same time afford water to any plants that require it. If the paths are washed and kept clean, the atmosphere will be sufficiently charged with moisture to last until the afternoon, when, if it is thought much fire-heat will be required during the night, the floors may again be sprinkled. In houses where the paths are made of wooden lattice-work or iron gratings, and where the spaces underneath are of an earthy nature, Ferns, Selaginellas, Moss, &c., probably grow there, and, evaporation being very slow, one damping-down each day may be sufficient; but a paved or tile-covered floor will require to be damped more frequently. In some cool-houses, such as those containing *Odontoglossums*, where the atmosphere is naturally damp, the daily watering of the plants will be sufficient to maintain the proper amount of moisture. It is difficult to offer advice to suit all cases, therefore it is necessary that each cultivator should work according to the means and circumstances that are at command. We find the hygrometer to be a very useful instrument, especially during winter. After the houses have been damped in the morning the atmosphere is brought nearly to saturation point, by mid-day it shows about 4° or 5° evaporation. By damping again between 2 p.m. and 3 p.m. for a very short time, the atmosphere is brought nearly to saturation point again. During the night it fluctuates between 3° and 6° of evaporation, the latter number when extra fire-heat is being used. These remarks apply principally to the East Indian, Cattleya, and intermediate houses. The moisture in the cool houses is nearly always within 3° of saturation with snow on the ground, and during very wet weather it is often within a degree of saturation point.

Temperatures at night.—Let the temperatures at night be about as follows, using discretion after considering the temperature for the time being outside—East Indian house 60° to 65°, Cattleya 55° to 60°, Mexican about 55°, *Odontoglossum* 48° to 50°. The cool intermediate house should be kept at all times a trifle warmer than that containing *Odontoglossums*. When much fire-heat is necessary keep as nearly as possible to the lower figures, but during mild weather the higher ones may be maintained without injury.

Habenarias.—*H. militaris* (pusilla), *H. Susanna*, *H. carnea* and its pure white variety *nivosa*, have passed their flowering stage, and water must be gradually withheld from them to induce natural decay of the stems and foliage. While the plants are at rest, however, they must not be kept too dry or the tubers will shrivel, and the young growths would then start weakly the following spring. At Burford we stand the plants together in the warmest house, and about once a week afford them a good sprinkling of water from a fine-rosed watering-can. *H. rhodocheila* having started to grow rather earlier than usual should be repotted at once. Turn the tubers out of their pots and select the largest

and strongest of them for potting singly into long thumb-pots, using proportionately smaller ones for the others. Fill up around the tuber to three parts of the depth of the pot with clean broken crocks, for being a shallow-rooting plant very little depth of soil is required. Use as a compost some peat and loam in equal proportions, adding a small quantity of chopped sphagnum-moss, small crocks, and coarse silver-sand. Mix the whole thoroughly together, and just cover the top of the tuber with the compost. Place them well up to the roof-glass in the warmest house, and until the new growths have fairly started an occasional sprinkling with water overhead will be sufficient. When in full growth plenty of water at the root is necessary, and a light spraying overhead on warm sunny days will be beneficial.

Miltonia vexillaria.—Plants that are growing freely will require constant attention, the tender young leaves frequently stick to each other, and become crumpled if not carefully separated. It will be noticed that at the base of some of the young growths there is a brown damp-looking outer sheath, which sometimes clasps the growths so tightly that the roots come up inside the sheath into the air, and make no further progress, instead of going down into the compost. This brown covering should be carefully slit in several places, and pulled up in small pieces. These remarks apply also to the *Odontoglossums* in the cool-house, the majority of which are now in full growth, and to *Miltonia Bleuana* and its variety *nebilior*. The rare *M. Endresii*, now showing its flower-spikes, should be elevated above the rest of the plants, so as to obtain all the light possible.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. Burns, North Mymms Park, Hatfield, Hertfordshire.

Eupatorium vernale and *E. petiolare*.—Both these plants received Awards of Merit last winter, and promise to be useful additions to mid-winter flowering plants. Both species have been grown here in a house having an intermediate temperature, and some of the flowers are now on the point of opening. The plants will probably be at their best at about Christmas. Some plants of *E. petiolare* which were placed in a cooler house a few weeks ago are making slower progress, as was to be expected, and these will flower in succession to the others. As far as we are able to see at present, *E. vernale*, with its somewhat dwarf habit and large flower-trusses, promises to be of use as a pot plant. *E. petiolare* has a strong, freely-branching habit, and is easily grown into large specimens, and should be useful both in pots where large plants are required for room decoration and for use in a cut state. We have, however, yet to learn whether the flowers will last well when cut, but there is ample length of stem, and the flowers are clear white.

Show and Fancy Pelargoniums.—The plants intended for flowering early in the spring should at the present time be bushy, compact specimens, and well established in 5-inch and 6-inch pots. Afford them a position as near to the roof-glass as possible, in a house where a temperature of 45° is maintained at night. No attempt should be made at this season to hurry the growth of the plants, but for the next two months the aim should be, by giving free ventilation whenever possible, to cause them to make slow, sturdy growth. If the roots are afforded too much water the plants will soon become unhealthy. The shoots of those plants that are required for flowering early should not be pinched back, but in the case of the later plants the points of the shoots should be stopped once or even twice where very late-flowering plants are wanted. When the shoots are stopped twice an extra re-potting should be given the plants at the time of the final stopping, otherwise the flower-trusses will be small.

Lapagerias.—As soon as these plants finish flowering the opportunity should be taken, before they commence to make new growth, to thin out the shoots if these are unduly crowded. The plants should be taken down from the trellis, and the glass and woodwork thoroughly cleansed. If thinning of the shoots be necessary some of the oldest may be cut out, and in any case the points of the shoots which have flowered should be pruned back to the first bud.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

General Work.—Owing to many of the crops having been cleared off, there is much ground vacant, and the work of dressing, manuring, digging, and trenching should be continued when the weather is favourable. The details of such work have been described in previous Calendars, but I would remind gardeners that each plot should be prepared in a manner best suited for the kind of crop it is intended to grow thereon. For instance, if Asparagus-beds are to be prepared on heavy soil for planting next spring, no better time can be selected than the present for having the work carried out. The winter frosts may then make the soil in good condition for planting when the time arrives. To those who may have recently taken charge of gardens where the soil is of a clay nature, and have had no previous experience with such soil, I would say that it is extremely important to have every yard of ground that is not under crops turned up as soon as is possible. Never bring the bottom spit to the top unless it has, by repeated applications of ashes, road-scrappings, lime, and manure when trenching, been brought into a workable condition.

Jerusalem Artichokes.—When the weather is mild, have sufficient tubers taken up to supply the kitchen for a time, and cover up other roots with long litter, to use in case of emergency.

Parsnips.—The foliage of Parsnips has usually kept green with us during the winter, but this season it had become quite yellow before it was touched by frost. Under these conditions we consider it best to take the roots up and have them pitted, they will then be at hand when required for use, and the ground can be got ready for another crop.

Hot-beds.—Collect stable-manure and shake out the droppings, to prepare them for the making of succession Mushroom-beds. Mix the long manure with leaves, and throw it into a heap for a day or two until it shows signs of heating, then make up hot-beds for forcing Carrots, Radishes, Potatoes, &c., sowings and plantings of which should be made at intervals, according to the demand that has to be met. Towards the end of the month other beds will require to be made up for Cauliflowers, Onions, &c.; it is therefore advisable to have sufficient material convenient so that the work can be carried out when it is desirable that it should be.

Dry Ashes.—A good heap of these is valuable, for ashes are necessary for many purposes, and as the rubbish-heap has been increasing in size recently an early opportunity should be taken to have the rubbish burned, so that ashes will be obtainable when wanted for the purpose of mixing with soot or lime for use against slugs, which during mild weather will be making their mark on November-sown Peas that are coming through the ground.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peaches and Nectarines.—The flower-buds on trees in the house which was closed early in November will be nearly ready to expand, and the trees must not be hurried at this time. The use of the syringe should be discontinued as soon as the buds show colour. Let the ventilators at the top of the house be sufficiently open to cause a circulation of air, gradually increasing the amount when the atmospheric temperature reaches 50°, at which point it should be maintained during the day by artificial means if this be necessary, allowing 10° more by sun-heat, with increased ventilation. A temperature of 40° to 45° will be sufficient at night in frosty weather. Keep a moderate amount of moisture in the atmosphere by damping the surfaces in the house early in the day. Take care to ascertain that the trees are not suffering from want of water at the roots. At the same time experience has shown me that bud-dropping upon the return of the sap is not so much from want of water at the roots as from a too early development of the buds, followed directly afterwards by decay, which is visible upon opening the buds of the earliest varieties previous to the sap becoming active again.

Succession-houses.—To maintain a supply of ripe fruit where there are about four Peach-houses, it will be necessary to allow an interval of a month between the time of starting each house. In the meantime, the trees should be allowed to rest as far as possible, complete any pruning that has not been done, and clean the house and trees. Let the borders have full exposure to the weather, and apply air-slacked lime to interior and exterior borders. Where space is available for the extension of the trees, let this have effect, and the trees will gain additional vigour. When planting lean-to Peach-houses, the general practice is to use a curved trellis in the middle of the house, and utilise the back wall for trees also, which answers well for a few years; but I have found considerable advantage to result from removing the trees from the back walls, and extending the front trellis to the extent of the house, at a distance of 24 inches from the glass.

Cherry-house.—Upon Cherry-trees planted in borders under glass any shoots not wanted for extension or for filling empty spaces should be cut back. But if regular attention has been given to stopping the shoots during the growing season very little pruning will be required now. This is the better practice, as Cherry-trees are so liable to be affected by "gumming." In the case of young trees, whether pyramids or fan-trained, do not shorten the terminal shoots unless the extreme size is reached in each case. Thoroughly cleanse the trees with soft-soap and water, but be careful not to injure the buds. Ventilate the house freely until it is closed for the purpose of inducing growth in the trees.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Pruning Large Orchard Trees.—Owing to pressure of work orchard trees are sometimes neglected in the matter of pruning, and the "heads" therefore become crowded with useless branches, and the fruits are small in size and of third-rate quality. In such cases I would urge the use of the saw, thinning out branches and shoots wherever this is required, to admit more air and light to the interior of the trees. In respect to trees that have been very much neglected, the useless wood should be removed somewhat gradually, extending the operation over two years. If careful thinning be done annually some old trees may be made to produce satisfactory crops of Apples of very good size and flavour. After cutting out the cross and interlacing branches, clear up the prunings and tie them in faggots for burning. Scrape the main stems of the trees with a piece of hoop-iron or a hoe, and thus cleanse them of moss, then dress the branches with fresh lime, dusting it all over the trees when the branches are damp, or it may be mixed with water and applied through a syringe. Old trees should be supplied sufficiently with liquid-manure, and if possible afford them a liberal top-dressing with good soil and manure.

Young Fruit Trees should be carefully pruned each year from the time they are first planted. A good tree should have four or five leaders to form the "head," keeping the centres free of other shoots. Always prune to a bud pointing in the direction the next season's growth is required to take. Side-growths should be shortened to within a few buds of the main branches, and as the heads increase in size other shoots should be left to help to fill up gaps, &c. As the trees become bigger do not shorten the leaders if the growth is not too long, but prune the branches regularly. Should the trees incline to grow too strongly it will be necessary to prune the roots also.

Planting.—Proceed with the filling up of gaps, &c., and in doing so see that the stations for the trees are prepared thoroughly, taking out the old soil fully 3 feet deep, and breaking up the subsoil to allow the water to pass away freely. Provide artificial drainage if this be necessary, and fill up the holes, which should be not less than 6 feet across, with fresh soil that has been prepared for the purpose. Notwithstanding that old orchard-trees may be improved as described above, it is well to plant a new piece of ground if possible with good varieties that will be of the most use for

the various purposes, and when these come into good bearing, grub up the old trees and use the land for some other crop than that of fruit-trees.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Wild Garden.—Vacant places to be planted should be cleared of any old roots that may be present and trenched, being careful to keep a suitable distance away from trees and shrubs when trenching. Mulching should be done now. Established bulbs and plants will be greatly benefited by this system of manuring, especially those planted in the grass. Peat-moss litter from the stable, is very suitable for heavy land. Beds of Rhododendrons and Azaleas should be afforded a thick mulch. When the weather is favourable plant large breadths of Primroses; from the woods. Ivy trimmings from buildings can be made into cuttings and planted on dry banks where nothing else will grow. Top-dress all specimen Conifers and Camellias with suitable soil. Climbing plants should be secured to supports to protect them from the wind. Passiflora corulea should have some bracken placed around and among the shoots, and the whole tied up to protect them from severe weather. Plants of Yuccas and clumps of Pampas-Grass should be tied up when they are dry in order to keep out snow. The presence of melting snow should cause the centres to rot. Suitable means should be taken to trap wood-mice and water-rats, which in severe weather will devour bulbs of Tulips that are planted. China and other Roses in beds should be cleaned of grass and weeds, which are difficult to keep under in the summer time. The beds may then be mulched with manure.

Planting should be proceeded with as quickly as possible, except in the case of evergreen shrubs, which will be better left until spring. Other shrubs that appear sickly may be lifted. Probably they have been planted too deeply, or in unsuitable soil. Beds or shrubberies that were planted some five or six years ago will require to be thinned out, but great care should be taken not to spoil the character of the bed. Keep the varieties together, whether deciduous or evergreen, for a better effect is obtained than when a single plant of one variety is by itself. When the frost has quite left the ground, give all freshly planted trees a good treading over the roots. Place supports to large trees and shrubs at the time they are planted. Three wires will secure a tree better than a single stake would do.

Bamboo Garden.—If this is becoming crowded put some of the plants in the grass; they will appear more natural and jungle-like than when planted in formal beds. Do not cut the clumps into very small pieces, but choose outside crowns, as these will start into growth sooner. Where the soil is of a light nature use cow-manure.

Carnations.—These plants require to be pressed into the soil after frost. Afford them a dusting of lime and soot, also fresh soil if the soil in the beds has sunk.

Pansies.—Look over cuttings of these in frames, afterwards moving and stirring the surface soil. Air should be admitted to the structure on all favourable occasions. Those planted outside should be pressed afresh into the ground.

Lawns.—If worm casts are very troublesome, apply some worm destroyer. Choose a dry day and sweep and roll the lawns over. If moss is growing a good application of wood ashes is the best remedy. If the verges require cutting with the knife, and have got away from the drains or out of their proper width, cut a piece off 6 inches wide, bringing this forward to form the edge or verge and place a new piece in at the back of this. The result will be better than a new verge. If any grass-land is being fenced in from the park for the pleasure-grounds, it need not be freshly laid, unless it is very uneven or the grass rank. Turn sheep on to it in the autumn and they will not only eat the grass, but manure the ground. Roll the grass on all favourable occasions, and if the ground is wet and heavy, provide drains. If the land is of clay a main drain 2 feet deep and side drains 18 inches are deep enough; where drains are 3 and 4 feet deep in the clay, the water never reaches them and they are useless.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DEC. 13.—Royal Horticultural Society's Committees meet. Exhibition of Colonial-grown Fruits, and of Preserved Fruits, Jams, &c.

WEDNESDAY, DEC. 14.—National Chrysanthemum Society's Exhibition of Market Chrysanthemums in the Essex Hall.

THURSDAY, DEC. 15.—Linnæan Society meet.

SALES FOR THE WEEK.

MONDAY NEXT—

Azaleas, Palms, Plants, Araucarias, Roses, Carnations, Bulbs, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY NEXT—

Burmese Dendrobies, Cattleya and Lælia Hybrids, Cypripedium Hybrids, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —40°6'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 7 (6 P.M.): Max. 41°; Min. 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 8 (10 A.M.): Bar. 29.6; Temp., 40°. Weather dull; signs of snow.

PROVINCES.—Wednesday, Dec. 7 (6 P.M.): Max. 46°. Cornwall: Min. 33°. North-east Coast of Scotland.

François Crépín.

BOTANISTS the world over directly or indirectly knew and respected CRÉPIN and his work. Primarily a botanist, he came in contact with horticulturists in virtue of his professorship in the school of horticulture originally established in connection with the famous nursery of VAN HOUTTE at Ghent. Afterwards as Director of the Botanic Garden at Brussels, which he did so much to remodel and improve, he again came in touch with horticulturists. His work was extensive and varied—that portion of it which appeals to the rosarian is naturally the one by which he is best known in this country. To our own columns he contributed what may be considered a tabular summary of his lifelong work on the classification of Roses, a summary of which still forms the basis of our knowledge of the species of Rosa. Unfortunately, however, CRÉPIN never lived to complete that general survey of the genus for which he had made such elaborate preparations; for as in the case of REICHENBACH and the Orchids, CRÉPIN became overwhelmed with the mass of detail which he had collected till time and ill-health stopped his progress towards a generalisation. This is to be regretted, but his writings and his speci-

mens remain the precious heritage of the botanist of the future. To commemorate CRÉPIN's services and to furnish a symbol of the respect due to his memory, a bust of the late Director was unveiled on Sunday last, in the Brussels Botanic Garden, by the sympathetic and eloquent Comte DE KERCHOVE DE DENTERGHEM. A large number of celebrities, including CRÉPIN's old colleagues, were present on the occasion. Professors BERTRAND of Lille, GRAVIS of Liège, DURAND and ERRERA of Brussels, and others, took part in the proceedings. The Count in his discourse sketched the career of CRÉPIN, from his boyhood in the Ardennes to the time when ill health induced him to retire from the Directorship of the National Botanic Garden.

The bust is said to be an excellent likeness. The National Rose Society figures in the list of subscribers.

Storing Potatoes in Pits or "Pies."

THE University of Leeds has been undertaking through its horticultural experts experiments with a view to determine how far the too common rotting through disease, of Potatoes stored in the ordinary farm fashion in pits or "pies," as they are sometimes called, might be checked or averted. In a pamphlet before us, we find that the experiments were conducted during the winters of 1902-3 and 1903-4. In the first winter tests were applied to ascertain how far apparently sound tubers dusted with ground-lime at the rate of 2 lb. per cwt. remained sound, and also to see how far similar tubers without lime remained sound. The primary result seemed to be that the limed tubers kept drier, and in the spring the lime readily scaled off.

Then came a test with similar sound Potatoes, with which were mixed 28 lb. of moderately diseased or unsound tubers, ground-lime being added as before; also a similar test without lime. The sprouts in the limed pie, doubtless owing to some additional warmth generated by the lime, were, when opened, some 2 inches longer than was the case with those in the unlimed pie. But in neither instance did the unsound tubers seem to have harmfully affected the sound ones.

A third test was carried out by covering the tubers in the pies with Potato haulm, somewhat diseased, and with dry Wheat straw. No disease seemed to have resulted in either case.

The trials of last winter were more limited, those relating to the haulm and straw covering being abandoned. The variation in tests, however, of the other two classes was greater. Thus each pie contained 2 cwt. of Potatoes. In the first one all were sound, and all well limed. When opened in April, 1904, having been pitted twenty weeks, the diseased tubers made 7½ lb., of which 5 lb. were spotted on the skin only. In the second pie, 1½ cwt. of sound potatoes were placed, and into the centre of the heap 28 lb. of skin-diseased tubers, without lime. Here, as might well have been expected, the diseased tubers reached to 29½ lb., 17 lb. of which were wet rotten, but the proportion of previously sound tubers contaminated seemed to be nil.

An exactly similar heap, treated with 14 lb. of quicklime, gave in April 32 lb.

diseased tubers, 15 lb. showing wet-rot. Here again the increase in disease was trifling. Still further, a third similar heap was treated with 24 lb. of slaked-lime, the result in disease being 32½ lb., or only 4½ lb. diseased beyond the 28 lb. diseased tubers originally introduced.

Now come three heaps in which the 28 lb. of diseased tubers introduced to each heap were affected with what is described as "wet-rot" at the time of making the heap—a most drastic as well as dangerous experiment. In heap the first, without lime, the tubers showing wet-rot had in April increased to 70 lb. With 14 lb. of quicklime added to the second heap the wet-rot tubers were but 26½ lb., and those with skin-disease only 1¾ lb., in this case showing not the least increase; whilst with slaked-lime 14 lb., the diseased product was 32 lb., of which 20 lb. was wet-rot. It is thus seen that in cases where deliberate effort of a drastic kind was made to inoculate the sound tubers in the pies with diseased tubers, that the application of 14 lb. of lime to each heap practically prevented infection; whilst without lime the wet-rot increased nearly threefold. It is, however, important that fresh or quicklime be used in preference to slaked-lime, as whilst the former scales off the tubers, leaving them clear and bright, slaked-lime becomes pasty and adhesive, and for that reason is objectionable.

In the pie which, without lime, gave 70 lb. of wet rot, it was noticeable that the infection had spread downwards rather than upwards. That was but natural, as 28 lb. of wet-rot Potatoes must have exuded considerable moisture. Sound tubers below had not sprouted, but those above had appreciably sprouted. That again was natural, as the mass would create greater warmth above than below. It is thought that one-half the quantity of quicklime, viz. 7 lb., would be ample for 2 cwt. of Potatoes, and there can be no doubt but that this quicklime test has proved to be the most practical and useful one connected with the trials. If, after learning of the results thus set forth, those who store Potatoes either in pits or pies, or in heaps, anywhere, refrain from dusting them with quicklime, they will be guilty of negligence. Quicklime is undoubtedly more absorbent of moisture than is slaked-lime, hence its value in helping to maintain dryness in the pits. Arising out of this matter there crops up the question as to how far tubers that seem sound when stored, and remain apparently so even when planted, yet often if cut show evidence of disease, cause injury when plant-growth ensues by infecting the stems and leaves, thus creating disease in their own progeny. Tests devoted to the elucidation of this matter would be of great practical value. Not that it is possible to determine how far a tuber may be diseased if kept whole at the time of planting, but using 6 oz. tubers and cutting them in halves before planting should reveal disease if any be present. It is also held that the practice of propagating Potato-plants by means of sprouts prevents inoculation from the tuber. That needs proving also. It was worthy of special note that when Messrs. SUTTON & SONS lifted their big breadth of sprout-propagated plants of Discovery in November, not a single diseased tuber was found.

ROYAL HORTICULTURAL SOCIETY.—The Society will hold a special show of colonial fruits, &c., on December 13 and 14. All exhibits of colonial fruit, &c., and of British bottled fruits, jams, &c., must be staged on Monday, December 12, and be ready for the judges at 4 P.M. At 5 P.M. the Council will hold a private view of the show, to which representatives of the Press and a few guests have been invited. Any space not required for exhibits under the special schedule will be allotted for groups of flowers, &c., as usual, but such exhibits can only be accepted on the special understanding that they must be staged before 11.30 on December 13, and that they will be left on view for the whole duration of the show, which will remain open till 10 P.M. on December 14. Plants shown for certificate only will be allowed to be removed at 4 P.M. on December 13.

THE VICTORIA MEDAL OF HONOUR.—We are informed that the Council of the Royal Horticultural Society have recently nominated Mr. THOMAS CHALLIS (Wilton House Gardens, Salisbury), Mr. ALEXANDER DEAN (Kingston-on-Thames), and Mr. EDWARD MAWLEY (Berkhamstead), to be recipients of the Victoria Medal of Honour. A more representative trio could not be found.

LINNEAN SOCIETY.—There will be a meeting on Thursday, December 15, at 8 P.M., when the following papers will be read:—"The Ecology of Woodland Plants," by Dr. T. W. WOODHEAD, F.L.S., &c.; "Experimental Studies on Heredity in Rabbits," by Mr. C. C. HURST, F.L.S., &c.

NATIONAL SWEET PEA SOCIETY.—We are informed by the Secretary, Mr. H. J. WRIGHT, that the annual general meeting of this Society will be held at the Hotel Windsor, Victoria Street, S.W., on Tuesday, December 13, at 2.30 P.M.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held on Monday, December 12, 1904, when a paper will be read by Mr. JOSEPH JOPLING (Fellow) entitled "Notes on Clay Working, more particularly Bricks and Tiles." The chair will be taken at 4 o'clock, this being one of two ordinary general meetings held for the convenience of country members in the afternoon instead of in the evening.

THE NATIONAL ROSE SOCIETY.—The *Florists' Exchange*, in commenting on the death of Dean HOLE, falls into the common error of attributing to him the foundation of this flourishing Society. That honour pertains to his and our old friend and colleague, Rev. H. H. D'OMBRAIN.

"THE BOTANICAL MAGAZINE."—The following notice, which is inserted in the December number, will be read by horticulturists with the greatest sympathy and deepest interest:—"With much regret we have to announce the retirement of Sir JOSEPH DALTON HOOKER, G.C.S.I., C.B., &c., from the editorship of the *Botanical Magazine*, after forty years of indefatigable service, which advancing years will not permit him to continue longer. We can only express our high appreciation of his work, and the deep obligation we have been under to him for so long a period. We sincerely hope that he may for many years enjoy the peaceful rest he has so well earned. The present issue, therefore, completes the Third Series of the Magazine, extending to sixty volumes."

—The following is the dedication of the current volume, which, as will be seen, has special significance:—

TO WILLIAM WATSON, A.L.S., F.R.H.S., Curator Royal Botanic Gardens, Kew.

DEAR MR. WATSON—

The dedication to you of the last volume of the *Botanical Magazine*, which I am privileged to conduct, gives me the welcome opportunity of expressing my sense of the value of the services which you have rendered to this work during your Curatorship of the Royal Botanic Gardens. This is due to the skill and

knowledge which you have devoted to raising and flowering an unprecedentedly large proportion of the rare, interesting and beautiful plants portrayed in the last twenty volumes of the Magazine, and to the valuable information which you have so often given me of the habits, history and mode of culture of these and of many other species whose portraits accompany them.

In conclusion, let me congratulate you on the recognition you have so fairly earned as an authority on the culture of Cacti, Palms, Aloes, Agaves, and other large groups of plants, in your study of which you have displayed as accurate a knowledge of their physiological characteristics as of their requirements under cultivation.

Believe me, very sincerely yours,

JOS. D. HOOKER.

The Camp, Sunningdale, December 1, 1904.

—The plants of which coloured illustrations and descriptions are given in the December number are the following:—

Kalanchoe Dyeri, N. E. Brown, t. 7987.—A noble species from Nyassaland, described in our columns in 1904, i., p. 354. The panicles are erect, much branched, and many flowered; each flower is white, with a corolla-tube nearly 2 inches in length, surmounted by a spreading limb 2 inches across, dividing into four narrow lanceolate segments. This is one of the most striking of newly-introduced plants, and would probably succeed in a warm greenhouse. Kew.

Cydonia sinensis, Thouin, t. 7988.—A species concerning which much confusion has arisen, which is now dissipated by Mr. HEMSLEY in the publication before us. The leaves are elliptic-acute, finely dentate; the flowers $1\frac{1}{2}$ inch across, with five spreading, rosy-lilac petals, each with a darker spot at the base; the fruit is about 5 inches long by 4 in breadth, oblong-obovate, yellowish when ripe, with a speckled rind. Kew.

Lonicera syringantha, Maximowicz, t. 7989.—In this hardy Chinese shrub the leaves are small, ovate; the flowers regular, pale lilac, grouped towards the end of the branches; the red berries are small, ovoid-acute, cuneate at the base. As the name implies, the flowers resemble those of the Lilac. Kew.

× *Odontioda Vuylstekei*, t. 7990.—It is not often that the representation of a hybrid has the honour of admittance to the *Botanical Magazine*, but if ever a plant deserved such recognition it is this. It is the result of a cross between *Odontoglossum nobile* (which it appears is the correct name for what is generally called *O. Pescatorei*) and *Cochlidia Neeltziana*, thus combining the attributes of two genera. It will be remembered that this plant "created a sensation" when exhibited by Mr. Vuylsteke at the Temple Show of the Royal Horticultural Society in May last. It was figured in the same week in our columns (see June 4, p. 360), but its remarkable colouration is fully brought out in Miss SMITH's drawing now published. Hort. Vuylsteke.

Tulipa Batalini, Regel, t. 7991.—A Turkestan species with pale sulphur-yellow flowers like those of *T. sylvestris*. See *Gardeners' Chronicle*, 1889, ii., p. 496, and 1896, vol. i., p. 759, fig. 131. Kew.

Commencement of a New (Fourth) Series of the "Botanical Magazine."—"We are now privileged to report that arrangements have been made for the commencement of a New (Fourth) Series of the *Botanical Magazine* under the auspices of Sir WILLIAM T. THISSELTON-DYER, K.C.M.G., C.I.E., LL.D., Sc.D., F.R.S., Director of the Royal Botanic Gardens, Kew. Sir WILLIAM's well-known high standing as a botanist, his interest in horticulture, and his position at the Royal Botanic Gardens, Kew, with all the resources of that great establishment at his command, afford every possible guarantee that the high character of the Magazine will be well maintained, and, if possible, raised to a higher level of interest to the botanist and horticulturist, as well as to all lovers of the floral beauties of Nature. The vast unexplored, or only partially explored, regions of

Africa, the two Americas, China, and other regions of the globe present practically inexhaustible sources whence to draw new subjects to adorn its pages. We are greatly indebted to Sir WILLIAM THISSELTON-DYER for his ready and generous response to our appeal. The first number of the Fourth Series will appear on January 1, 1905. Lovell, Reeve & Co., November 30, 1904."

POTATOS.—It is stated that at the recent Potato Show at the Crystal Palace no fewer than 453 varieties were shown. How many of these were synonymous it is not stated.

ROYAL GARDENERS' ORPHAN FUND.—We are pleased to record the fact that the Committee of the Bradford and District Chrysanthemum Society has again been able to send this Fund the sum of £6 as the result of a collection and of the sale of flowers made at their annual exhibition on November 11 and 12. We heartily commend the kindly action of the Bradford Gardeners to the notice of other flower-show Committees.

THE DARWIN MEDAL.—At the annual meeting of the Royal Society, on November 30, the President (Sir WILLIAM HUGGINS) said:—"The Darwin Medal is awarded to Mr. WILLIAM BATESON, F.R.S., for his researches on heredity and variation. Mr. BATESON began his career as a morphologist, and distinguished himself by researches on the structure and development of *Balanoglossus*. . . Dissatisfied, however, with the methods of morphological research as a means of advancing the study of evolution, he set himself resolutely to the task of finding a new method of attacking the species problem. Recognising the fact that variation was the basis upon which the theory of evolution rested, he turned his attention to the study of that subject, and entered upon a series of researches which culminated in the publication in 1894 of his well-known work, entitled *Materials for the Study of Variation*, &c. This book broke new ground. Not only was it the first systematic work which had been published on variation, and, with the exception of DARWIN'S *Variations of Animals and Plants under Domestication*, the only extensive work dealing with it, but it was the first serious attempt to establish the importance of the principle of discontinuity in variation in its fundamental bearing upon the problem of evolution, a principle which he constantly and successfully urged when the weight of authority was against it. In this work he collected and systematised a great number of examples of discontinuous variation, and by his broad and masterly handling of them he paved the way for those remarkable advances in the study of heredity which have taken place in the last few years, and to which he has himself so largely contributed. He was the first in this country to recognise the importance of the work of MENDEL, which, published in 1864, and for a long time completely overlooked by naturalists, contained a clue to the labyrinth of facts which had resulted from the labours of his predecessors. He has brought these results prominently forward in England in his important reports to the Evolution Committee of the Royal Society, and in papers before the Royal and other societies, and also before horticulturists and breeders of animals. He has gathered about him a distinguished body of workers, and has devoted himself with great energy and with all his available resources to following out lines of work similar to those of MENDEL. The result has been the supporting of MENDEL'S conclusions and the bringing to light of a much wider range of facts in general harmony with them. It is not too much to say that Mr. BATESON has developed a school of research to which many biologists are now looking as the source from which the next great advance in our knowledge of organic evolution will come."

THE MARKET GARDENERS' COMPENSATION ACT.—At a conference of the Scottish Chamber of Agriculture, held in Glasgow on October 26, Mr. ALEX. DOUGLAS, Vice-President of the Edinburgh Market Gardeners' Association, submitted the following resolution, which was adopted unanimously:—"That the Market Gardeners' Compensation Act ought to be amended, so as to make the leading provisions thereof consistent with each other." It is now reported that Mr. GEORGE SINCLAIR, who seconded the resolution, will bring forward a motion regarding compensation to market gardeners at the annual meeting of the Edinburgh Market Gardeners on Dec. 20.

DUBLIN SEED AND NURSERY EMPLOYÉS' ASSOCIATION.—On December 3 the above body held their second annual dinner and social reunion in the Gresham Hotel, Dublin. Mr. JAS. ROBERTSON, J.P., presided, and there was a large attendance. Immediately to the right and left of the chairman were Professor HOUSTON, of the Royal College of Science, and Mr. F. W. MOORE, Royal Botanic Gardens, Glasnevin. Congratulatory telegrams were received from the Edinburgh seed-trade assistants and Mr. CARSON, of Berwick. Mr. F. W. MOORE proposed the "Dublin Seed and Nursery Employés' Association." An Association such as that, he said, had the sympathy of all. As to the Irish seed and nursery trade, during a thirty years' experience of it he never had one unpleasant experience. He had always had his wants attended to with tact, courtesy and efficiency. Where, he asked, would humanity be but for the seed and nursery trade? It was a great and noble trade, and he congratulated them on having the Association. Mr. J. ROBERTSON said that during the short time the Association had been established it had done a great deal of good. Much of the credit of this was due to Mr. McDONOUGH, their energetic secretary, and also to their committee. Having impressed upon the younger members the importance of improving themselves, he expressed the hope that they would uphold the reputation of the trade. He also pointed out that the element of education was never absent from any of their meetings or excursions. In giving "Our Employers" Mr. J. W. HENDERSON referred to the trips which the Association had made during the summer. Such educational work made the assistants most valuable to their employers, whom they had to thank for the prizes they offered for competition in 1905. Mr. M. ROWAN in reply described the employés as a most worthy, faithful, and intelligent class of young gentlemen. Mr. J. A. ROCHFORD, in proposing "Our Guests," mentioned Dr. PETHYBRIDGE and Professor HOUSTON, from whose lectures on botany they hoped to reap great benefit. He also mentioned that their Chairman had been successful in starting a genuine Irish industry by bringing Holland into Ireland. Professor HOUSTON in reply said that all associated with agriculture and horticulture must be gratified by the work done by the Association. Technical education, he said, worked entirely for the benefit not only of the trade but of agriculture and horticulture. He hoped they would retain the premier position they held as nurserymen in the British Isles.

THE BRITISH GARDENERS' ASSOCIATION.—A well-attended meeting of the Caterham Gardeners' Society was held on Friday, the 2nd inst., to hear an address by Mr. R. HOOVER PEARSON upon the British Gardeners' Association. The lecturer sketched the history of the Association, which he said was intended to be to the gardening profession what the various organisations which control other professions are to them. He then referred to an article which had appeared in a leading daily journal, and in which it was stated that many men who had failed or from

various causes lost their employment in other professions, drifted into gardening, accepting practically any wage offered to them, greatly, of course, to the disadvantage of the trained professional gardener. The British Gardeners' Association hoped to be able to exert a moral influence that would have the effect of remedying this state of affairs, so that thoughtful gardeners should at once become members, and thereby help the cause of reform. The Association intended to operate in a conciliatory spirit, particularly recognising that the best interests of the employer must be looked to, as well as those of the employé, if any real good was to be done. Employers would readily welcome an organisation which would serve their best interests by supplying them with thoroughly experienced workmen. Mr. PEARSON then read the prospectus issued by the Association. In the discussion which followed it was stated by some of those present that not having clearly understood the objects and programme of the Association, they had hesitated to become members; but that after hearing Mr. PEARSON they would gladly do so, and also do their utmost to persuade their friends to join. Twenty of those present offered their names as candidates for membership.

FLINDERSIA MACULOSA: THE LEOPARD WOOD.—In the early stage of growth of this tree "it forms a tangled mass of long, thin branches. These branches are not spinous or prickly, but form a hedge, so that while stock (chiefly sheep) prune the peripheral branches they cannot eat the whole of them. As growth advances, a leading shoot shows itself and is protected by the branching entanglement which encircles the main stem for several feet. By degrees these tangled branches atrophy and leave more or less of the stout main stem with its characteristic blotchy or spotted bark. Sometimes the tangled branches persist for a considerable period near the ground, sometimes the stem is clean and the tangled mass is several feet up. In some cases the portion near the ground, in others that several feet above it, alone persists; in fact, different trees show much variation." An illustration is given showing the tree in its young stage and in its adult condition.

EDINBURGH SEED TRADE ASSISTANTS.—The tenth annual dinner of the Edinburgh Seed Trade Assistants was held on December 2 in FERGUSON & FORRESTER'S, Princes Street, Edinburgh. Mr. P. M. GREIG, the Chairman of Committee, presiding over a company of about a hundred gentlemen. Among those present were Mr. DAVID BELL, Leith; Mr. WILLIAM NEWTON, Mr. R. R. COSENS, Mr. R. GIBB, Mr. M. TODD, and Mr. R. LAIRD. After the loyal and patriotic toasts had been duly honoured, Mr. DAVID BELL gave the toast of "The Seed Trade Assistants," and in doing so said that Scotland was the training ground for the seed trade of the United Kingdom, and in that respect no place was more important than Edinburgh. Mr. M. TODD, in proposing the toast of "The Nursery and Seed Trade," said he was glad to be able to tell them that the nursery and seed trade was in a prosperous condition. For a long time Edinburgh had been regarded as the Mecca of the trade, and let them go where they liked, he said, they came upon men who had been trained in Edinburgh occupying places of responsibility and trust. For centuries Edinburgh had been recognised as the headquarters of the trade, and to all parts of the world they found plants and seeds being sent from that city. It was a guarantee of the quality of these seeds and plants when they came from Edinburgh, and he might say that though he had a great respect for the men who had brought the nursery and seed trade to the present position, he was ready

to admit that its present members were as good, and probably better, than their predecessors. In coupling the toast with the name of Mr. LAIRD, he remarked that that gentleman had been responsible, perhaps more than any other person, for stamping the Scottish Horticultural Association as one of the first societies of its kind in the world. Mr. R. LAIRD, in responding, said he sometimes felt that the young men of to-day did not get the same opportunities as their predecessors had. When he was a boy he was sent into the nursery, and thereby he was enabled to learn both branches of the trade. Perhaps nowadays they had better seedsmen, but he did not think they had better all-round men; and he urged upon all young persons who were going into the trade to get, if they possibly could, a good insight into the work of the nursery as well as the seed trade. It was really essential to know the two departments thoroughly. A number of other toasts followed, and during the evening a long and excellent programme of songs and recitations was carried through.

DUNDEE SCHOOL CHILDREN AND GARDENING.—The bulb competition amongst children attending Dundee public schools, organised by Mrs. CARLAW MARTIN, this season promises to surpass the successful efforts made in past years. A new feature of this season's exhibition will be a section devoted to collections of pressed or dried leaves. The promoter, and those associated with her in this work, desire that children should be encouraged to make such collections, however simple, in books, and, to show their educational value, to name the leaves, and represent them either in outline or in colour. Attractive prizes will be given for the most meritorious collections, regard being had to the age and class of the competitors. This year no fewer than 38,540 bulbs—Hyacinths, Crocus, Tulips, Daffodils, &c.—have found their way into the hands of school children. These represent a value of £64 10s. Mr. MONTGOMERY, the officer of Dudhope Park, who has been charged with the duty of distributing the specially selected leaf-mould furnished by the Recreation Committee of the Town Council, has experienced a busy time. No fewer than 2,192 children were supplied. This is a large increase on last year, when between 1,700 and 1,800 supplies were issued.

HONOURS FOR FRENCH CHRYSANTHEMUM GROWERS.—Those who have made the personal acquaintance of Mr. ERNEST CALVAT, the eminent raiser of new seedlings, and Mr. PHILIPPE RIVOIRE, the Secretary of the French National Chrysanthemum Society, will be interested to learn that at the Montpellier Show the former was appointed Commander of the Order of the Mérite Agricole, and the latter was promoted to the rank of Officer of the same Order. Both these gentlemen have done much for the popularisation of the Chrysanthemum, and we heartily congratulate them upon the honours received.

FREE LIBRARIES AND GARDENERS.—The members of the Cardiff Gardeners' Association paid their annual visit to the Cardiff Central Free Library on Tuesday, November 29, when Mr. F. G. TRESEDER occupied the chair. Mr. JOHN BALLINGER, Chief Librarian, received the members in his private library, where he had already placed a large collection of books relating to horticulture on the tables, and addressing the meeting he said that quite recently he had succeeded in adding to the collection *The Pinetum Britannicum*, 3 vols., 1884, besides others, in order to keep the collection up to date. After spending a couple of hours looking over many of the volumes, the chairman moved that a very hearty vote of thanks be accorded Mr. BALLINGER for the great interest he has taken on behalf of the gardeners of the district in being instrumental in bringing

* *The Forest Flora of New South Wales*, J. H. Maiden, Part X., p. 212.

together such a valuable collection of books for the aid of all those interested in horticulture. Mr. MALPASS, in seconding, urged upon the young members to grasp the opportunities afforded them at the present day. The chief librarian, thanking the members, said that he was at all times ready to consider any suggestions in respect to adding new books. We may add that at the Cardiff Public Libraries a special catalogue of books on the subject of gardening is issued, and from a copy we have received from Mr. JULIAN, Secretary to the Gardeners' Association, we find that it includes as many as twenty pages.

A NATIONAL COUNCIL OF HORTICULTURE.—What promises to be one of the most useful steps yet taken for the promotion of American horticulture had its origin at a general horticultural meeting held in St. Louis, November 10, in connection with the national flower show. After listening to papers setting forth the needs of our profession by LUTHER BURDANK, WILLIAM FALCONER, WILHELM MILLER, C. S. SARGENT, and GEORGE C. WATSON, the gentlemen present turned to the consideration of means by which the varied and numerous horticultural interests of the country might be placed in closer touch with one another, so that the needs of each might receive the support of all. The opinion was unanimous that the time is ripe for the organisation of a central council, in the membership of which should be found permanent official representation of such national societies as the American Civic Association, the Society of American Florists, the American Pomological Society, the nursery and seed trade associations, the plant breeders, &c., establishments like the Arnold Arboretum, the National Bureau of Plant Industry, the Missouri Botanical Garden, &c., the horticultural press, and gentlemen of means and leisure, who, though unofficially connected with such organisations, are devoting their efforts to increased knowledge and use of cultivated plants and to their improvement. The organisation of the proposed council was placed in the hands of a committee of representative men, most of whom are not interested in commercial horticulture, who will probably associate with themselves an auxiliary trade committee, and it was the earnest hope of all who attended the meeting that this organisation committee may succeed in enlisting the interest of everyone who wishes to see horticulture—in the broadest possible sense—advanced through the co-operation which alone promises the largest results with the minimum of effort and waste. There are many ways in which good work can be done through the proposed council. Some of these were touched on in the papers read, and in the following discussion at the St. Louis meeting, which will probably be published in the horticultural journals within the next few weeks; but not a tithe of its possibilities could be even mentioned in the limited time claimed by participants in the meeting, and it is to be hoped that the columns of the press will be freely opened and extensively and promptly used in discussion of the subject while the plans of the committee are shaping themselves. *William Trelease.*

"THE AMATEUR GARDENERS' DIARY AND DICTIONARY."—The Dictionary indicates what to plant and the Diary affords intimation as to when it should be planted. Altogether the book forms a very useful guide to the novice or amateur. Its price is one shilling, and it is published at the office of *Garden Life*, Hatton House, Great Queen Street, London, W.C.

"FLORA AND SYLVA."—The December number is, as usual, beautifully got up, and its contents are varied and interesting. Mr. FITZ-HEEBERT describes an unusually interesting Cornish garden. A good account is given of the

Ginkgo, the tallest specimen of which is said to be at Melbury, near Dorchester, where it exceeds 80 feet in height. A characteristic coloured plate is given of the new *Rhododendron yunnanense*, a plant which affords an indication of what we may expect from the great *Rhododendron* area of South and West China. The article on *Wistarias* contains mention of several species and varieties not known out of botanic gardens, and a similar remark may be made with regard to the note on Quinces. Such articles confer a permanent value on the publication.

NEW YORK FLORISTS' CLUB.—The following resolutions on the death of the Very Rev. Dean HOLE, of Rochester, England, who was an honorary member of the club, were read, on November 19, by ALEX. WALLACE, adopted, and a copy ordered to be sent to the family of the deceased:—

WHEREAS, We, the members of the New York Florists' Club, having learned with deep sorrow of the death of our much esteemed honorary member, the Very Rev. SAMUEL REYNOLDS HOLE, Dean of Rochester, England, which occurred at his home there Saturday, August 27 last, be it

RESOLVED, That we hereby, and in this manner, express our appreciation of the great loss which the garden craft throughout the world has sustained in the passing away of one who during his lifetime did so much to advance its interests. His attachment to horticulture in all its branches was strong and lasting, and both by precept and example he did everything in his power to further and encourage a love for the art which he himself loved so well. His devotion to the Rose in particular was one that has rarely, if ever, been surpassed. By his writings and by his personal labours on behalf of this flower he gave an impetus to the cultivation of the Rose, the influence of which was, and is, felt in every corner of the globe. And be it further

RESOLVED, That to his aged and dear life-partner and her sorrowing family we tender our most sincere sympathy in their irreparable bereavement. We commend them to the care of Him who wisely orders all things well, and assure them that the memory of the beloved husband and father whom they mourn; the good and noble man whom we all loved and revered; the great and grand work he accomplished; the encouragement he gave; the example he set, will abide in our hearts as long as life lasts, fragrant and exhilarating as the breath of his own beloved flower.

(Signed) WM. J. STEWART,
PATRICK O'MARA,
ALEX. WALLACE.

TASTING EXPERIENCES.—MM. TOULOUSE and VASCHIDE, having ascertained that the sense of smell was more keen and more discriminative in women than in men, have extended their enquiries into the relative degrees in which the sense of taste is exercised by men and by women. The results are summarised in a recent number of the *Comptes Rendus* of the Academy of Science, Paris, and from them it appears that men are more sensitive to the taste of salt and to that which is bitter. So far as regards the sensation and perception of sweet and of acid substances, there is little difference, if any, between the sexes. It would seem then, if these results be substantiated, that our fruit committees, tea-tasters, and wine-samplers should consist of women, since their sense of perfume, if we may so call it, is superior to that of men.

ALPHONSE KARR.—It is proposed to erect a monument to Alphonse Karr—we presume at Nice.

EUCALYPTUS FICIFOLIA.—We are so apt to think of these Australian trees in connection with their gigantic size and rapid growth that we are apt to overlook the beauty of their flowers. Those who witnessed the specimen shown at the Royal Horticultural Society recently of *E. Globulus* were much struck with the beauty of the flower. See also *Gardeners' Chronicle* Supplement, December 24, 1887. In the current number of the *Revue Horticole*, M. ANDRÉ gives a coloured illustration of the species mentioned at the head of this note. The leaves are shortly stalked, tapering at the base, ovate lanceolate; the flowers in clusters as in *E. Globulus*, and each flower of about the same size, but the colour in this case

is a bright orange-red. The figure was taken from a specimen growing in the nursery of Messrs. NABONNAND, of Golfe Juan.

FAT CATTLE AND MONSTROUS ROOTS.—Once again the approach of the Christmas season has been marked by the holding of a fat cattle show in the Royal Agricultural Hall, Islington. Unlike the Royal Agricultural Society, the Smithfield Club is as prosperous as ever, and its latest exhibition has been as good an advertisement of English-fed beef and mutton as were any of its predecessors. An urban visitor to these shows cannot but be impressed with the appearance of plenty and prosperity that characterises everybody and everything in the building. The fat beasts, stoutly-built, red-faced farmers and "feeders," and over-grown "mammoth" Mangolds, Swedes, Turnips, &c., all bear the impress of "plenty." Poverty and want may and do exist in the very immediate surroundings of the Islington Hall, but it is difficult to realise this when inside the hall, where his Majesty the KING and Lord ROSEBURY were friendly rivals for prizes, and each was successful in several important classes. The representative of the *Gardeners' Chronicle* could only make a very cursory inspection of the cattle, for his interest lay chiefly in an examination of the many useful agricultural and horticultural labour-saving machines, and in an inspection of the seedsmen's exhibits in the gallery. The proportion of machines and implements suitable for use in gardens, as against those for agricultural purposes, appeared to be less than formerly. Among the exhibits of roots and seeds made by seedsmen were those following:—Messrs. SUTTON & SONS, Reading, made, as usual, a very bold display with agricultural roots, samples of grain, seeds, &c., and in addition showed excellent tubers of new and select standard varieties of Potatoes. Such varieties were shown as Reliance, May Queen, Windsor Castle, Supreme, Abundance, &c.; also tubers of the firm's well-known new variety Discovery, and of Superlative, a new variety raised by Messrs. SUTTON & SONS, and not previously exhibited. The tubers are of very attractive appearance, and the variety is said to crop well and be good when cooked. A collection of tubers was also shown representing the produce from separate roots of seedling varieties in the first year. It was similar to the collection staged at the National Potato Society's show at the Crystal Palace, when the firm was awarded the Llewelyn Silver Cup. Messrs. E. WEBB & SON, Wordsley, Stourbridge, had exceedingly big roots of Imperial Swede, Yellow-fleshed Tankard, New Lion Intermediate, and New Smithfield Yellow Globo Mangolds; also new varieties of Potatoes, as Express, New Empire, Progress, &c. Messrs. J. CARTER & Co., High Holborn, had tubers of Potatoes of many new sorts. "Great Scott" was marked up at £20 per lb., Gold Reef (FINDLAY), £25 per lb. Then there were Eldorado, Northern Star, Million Maker, Royalty, &c. Messrs. HARRISON & SONS, Leicester, included in their exhibit several sorts of garden root crops, as Carrots, Onions, &c. Messrs. W. HORNE & SON, Cliffe, Rochester, showed The Houlton, Charles Ross, and many other sorts of choice Apples. Messrs. DICKSONS, Ltd., Chester, had also Apples, Potatoes, samples of grain, &c., in addition to other exhibits. Messrs. E. W. KING & Co., Coggeshall, made a feature of Potato tubers, and displayed a crop of 12 lb. 7 oz. obtained from a single root of Eldorado. Messrs. W. & J. BROWN, Stamford and Peterboro', showed a good collection of Apples and a few Pears, also fruit trees lifted from the ground. Messrs. R. SMITH & Co., Worcester, had very fine Apples, a few Pears, Potatoes, and other things. Messrs. GARTONS, Warrington, showed samples of new pedigree Oats, Barley, Wheat, &c. Messrs. J. K. KING & SONS, Coggeshall and Reading, made a display of Swedes, Turnips, Mango's, &c. Mr. ALEX

BLATCHFORD, Coventry, showed seeds of grains and selected roots of large size, representing Swedes, Mangolds, &c. The greatest interest was shown in Potatos, and there was much discussion upon the merits and values of new sorts. Mr. A. FINDLAY, of Markinch, N.B., displayed tubers of all his new varieties, such as Eldorado, Up-to-Date II., Royal Kidney, Million-maker, and others. Messrs. W. DENNIS & SONS, Kirton, Lincolnshire, and Covent Garden, London, showed their speciality The Cropper, and tubers of other renowned sorts. Mr. S. M. THOMAS, Edinburgh, showed the Dalmeny set of new varieties, one of which is named Radium, as was also one of Lord ROSEBERRY's prize beasts. Mr. W. J. MALDEN, Manor Farm, Ham, Surrey, showed seed tubers of select novelties. Messrs. FIDLER, Reading, made an extensive display, showing tubers of as many as sixty varieties, among which May Beauty was very attractive; and Mr. T. A. SCARLETT, Market Street, Edinburgh, had also an exhibit of seed Potatos.

BOOK NOTICE.

DUNSTABLE, ITS HISTORY AND SURROUNDINGS.

By Worthington G. Smith. (London: Elliot Stock.) Pages 192, 16mo. Map and numerous illustrations.

"A PROPHET," we are told, "is not without honour, save in his own country and in his own house." The general truth of this statement does not preclude an occasional exception. The author of this book furnishes such an instance. On the title-page, amid some distinctions which may be obtained by an annual payment and a certificate of fitness, is one which money could not buy. Mr. Worthington G. Smith is proud to call himself "First Freeman of Dunstable," and those who know him will feel that the municipality of Dunstable has conferred honour on itself and afforded an example which it may be hoped other boroughs will follow as and when occasion serves.

In the book before us the "first freeman" has requited his fellow-townsmen by presenting them with a veritable encyclopædia in miniature. What is not included, with few exceptions, we may take it is not worth mention. The geology, the topography, the natural history of the town and its neighbourhood, are all sketched tersely, concisely, but, so far as limitations will allow, thoroughly. As to the human interest, the appearance, the manners and customs of the inhabitants, Mr. Smith begins at the beginning, and tells us what primæval man did on Dunstable Downs, how he chipped flints to protect himself from mammoths and rhinoceros, or to supply himself with food from the reindeer and other animals long since extinct in Bedfordshire. It was a long step from prehistoric man to the times of the Romans and the Danes and the Saxons, but Mr. Smith is equal to the occasion, and descants upon the works and ways of those early settlers. With the coming of the Normans he is on surer grounds. Many a church built by them still exists in the neighbourhood, and is still devoted to the purpose for which it was originally erected. With the patience of an antiquary and the exactness of an architect Mr. Smith describes these buildings, and in many cases with the skill and feeling of an artist he has drawn them. Readers of the *Gardeners' Chronicle* will not need to be reminded of the firmness and truth and beauty of outline which characterise his work, and which have for so many years graced the pages of this journal.

Having described the town, Mr. Smith details with minute care the highways and byeways, the downs, the woods, the villages in the neighbourhood. Their folklore, their superstitions, their dialect, all receive attention.

The flora is principally that of the chalk formation, boasting many Orchids, the curious green Hellebore, and the lovely Pasque flower among others. One omission we note with some surprise, as to his many attainments our versatile friend adds that of an accomplished mycologist, and yet there is no mention of the fungi.

Geologist, antiquary, historian, biologist, botanist, all will find something to interest them in these pages. The book is well printed, well illustrated, and has a good index—what more can we say but advise those interested in Dunstable to make themselves possessors of the volume, and further advise other observers to describe the locality in which they may happen to reside with the same exhaustive care as Mr. Smith has bestowed on the town which boasts of him as its first freeman?

FENDLERIA RUPICOLA.

This is a pretty, low-growing, hardy or half-hardy shrub, with neat foliage and flowers, not unlike those of a *Philadelphus* or a *Carpenteria*.



FIG. 174.—FENDLERIA RUPICOLA.

It is a native of the S.W. United States, and may be propagated by seeds or cuttings. Our illustration has been reproduced from a photograph taken in the Royal Gardens, Kew, by Mr. Raffill.

PLANT NOTES.

MECONOPSIS BELLA.

I WAS interested to read in the *Gardeners' Chronicle* that there were seedlings of *Meconopsis bella*, Prain, at Messrs. Bee's nursery at Neston. As you rightly remark, it is impossible in English gardens to imitate the conditions under which this lovely Himalayan Poppy is found naturally. The nearest approach to it, I think, would be a house devoted to cool filmy Ferns. I would suggest the plants being raised from seed, and put carefully into small pots filled with a compost of nodules of soft sandstone and sphagnum-moss, the pots to be then laid on their sides on some ledge or niche in the wall of the house at its coolest and dampest part, where the roots of the plant would be kept moist by natural percolation of water. I have never seen a plant of this species in soil (ordinarily so-called), or with its root or main axis in a perpendicular position, though the leaves and flowers always curve upward. The plant is, I believe, strictly a biennial.

With regard to the question of the non-germination of alpine seeds from the higher levels of the

East Himalaya when sent to other countries, may not this be due to the drying process they go through *en route*? There is in their native habitat just enough dry weather in autumn to ripen or partially ripen the seeds, which, on falling, are almost at once covered with snow, under which they lie till spring with its showers causes them to germinate. This is not exactly like a Red Sea passage. It is a fact known to all gardeners that seeds of some plants at least germinate both more quickly and more successfully if sown as soon as ripe, and I have personally tested this with the Sikkim alpine, sowing them as soon as gathered, and at varying intervals, with the result that the quickness and percentage of their germination varies in inverse ratio with the length of time of keeping. Some of them, however, are some months before they appear above ground after sowing. G. H. C., Darjiling.

BOUGAINVILLEA SPECTABILIS.

Your interesting note and illustration on p. 383 remind me that when flowering in all its grandeur this plant is lovely, and well worth the waiting that is necessary before it is established, and reaches the flowering stage. Unlike *B. glabra* and *B. speciosa*, *B. spectabilis* flowers on the old wood, and must not be cut back yearly, as is done in the case of *B. glabra* and *B. speciosa*. *B. spectabilis* is a very strong grower, making shoots 5 and 6 feet long in a season. These shoots should be thinned out, be near the glass, allowed to get all the sun possible so as to become well matured. They will then flower the following year the entire length of the shoots, and in a large conservatory form a grand sight. There was a plant in the conservatory at Alnwick Castle for many years, but it did not flower whilst subjected to the pruning that is practised upon *B. glabra*—namely, that of cutting back the growths closely each year. This plant was brought from Naples by Algernon, fourth Duke of Northumberland, in the year 1851, but did not flower until 1874, and the gardener, the late Mr. Alexander Ingram, sent shoots 4 feet long and one mass of flower to the Editor of the *Gardeners' Chronicle*; also special boxes were made, and many flowering shoots of this plant were sent to other places of note.

B. speciosa is often mistaken for *B. spectabilis*, but the two are quite distinct, *speciosa* being easier to flower; but I would much rather have *B. spectabilis*, provided I had space in which to grow it. The species of *Bougainvillea* are often grown in too hot an atmosphere. I have *B. glabra* growing in a cool conservatory, and it has flowered during the whole summer, and is even now in bloom. This plant, obtained from a cutting by my foreman only three years ago, is now 14 feet in height, and shoots 4 feet in length were cut and taken to this year's Rose show at Holland House. If the plants are grown in a cool atmosphere the bracts assume a much richer colour. W. C. Leach, Albury Park Gardens, Guildford.

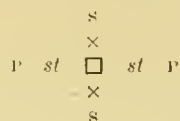
SOFT-ROT OF THE WHITE ARUM.—Mr. C. O. TOWNSEND, of the United States Department of Agriculture, has studied and described a disease affecting the "Calla Lily," or "Arum Lily," *Richardia athiopica*, which, of course, is not a Lily at all. The disease in question destroys the plants just before or during the flowering period. The outer portion of the corm rots away, and when examined myriads of bacteria are found. These may be isolated and cultivated, and when previously healthy plants are inoculated with them they speedily show signs of the disease. As the bacillus attacks other plants besides the Arum, care should be taken to destroy the affected plants. Its growth is not affected by diffused light, but direct sunlight kills it in a few minutes. It may remain dormant for many months till favourable circumstances call it into life.

A TWO-FOLD CYPRIPIEDIUM.

AMONG Orchids a very common variation is one in which the parts of the flower are arranged in successive pairs with two sepals, two petals, one or rarely two stamens, and so forth. In the genus *Cypripedium* there are always normally two stamens, one on each side of the column, the genus differing in this respect from most other Orchids, which have but a single median stamen. In a flower of *Cypripedium Harrisianum* ×, sent us by W. F. Roper, Esq., Kingston Hill, there are two sepals, two narrow petals crossing them at right angles; no lip, but a central column bearing two barren and two fertile stamens. As every Orchid-grower knows, the column of an ordinary *Cypripedium* has a barren, shield-like staminode concealing on each side an anther, and terminates in a more or less three-lobed stigma turned downwards. According to the usually

but a single cavity, without any ovules. The figure (fig. 175) shows the flower of the natural size, with its two sepals placed fore and aft, its two petals, one on each side, and the column bent on one side to show the position of one of the side anthers. The smaller illustrations show the top of the column as seen in front and at the side, with the fore and aft staminodes, the two side fertile stamens at right angles to the barren stamens, and the central four-sided stigma.

The subjoined plan will show the arrangement of the parts:—



where s stands for sepals, r for petals, × for the staminodes, st for the fertile stamens, and the

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE BRITISH GARDENERS' ASSOCIATION.—I read with great interest Mr. W. H. Divers' letter on p. 333, and am thoroughly in sympathy with the objects of the Association. The writer says: "It will be largely in the employers' interest, as affording some guarantee to him that he is getting a gardener more or less trained." I am not an old man, but for some years I have had the opinion that many employers are very long-suffering in connection with their gardens (and gardeners). Incompetent men get into responsible situations, and seem to neglect in many ways their employers' interests, who, in fact, gets very little value for his money; and as for training young gardeners, this is quite beyond them in every way; but I do not see how the Association can remedy this; it seems to me to rest with the individual. I think the system usually followed in large places in England is faulty, i.e., that of keeping boys and young men practically always under glass or at work connected with the glass department. One meets many young men who have rarely done a day's work outside, who in fact have never had the chance, and it certainly is, by some younger members of the craft, considered derogatory to be seen working outside; consequently, a false standard has arisen, which is responsible for much trouble when the young men have to undertake not only the inside, but the sole direction of all outside departments. This, as Mr. Divers truly remarks, constitutes the chief part of a gardeners' duties, for the provision of a constant supply of vegetables and salads in and out of season is not quite so easy as it may appear to be, apart from the fact that employers of the present day are taking an increasing interest in all classes of outside work in connection with the flower-garden and pleasure-grounds. I trust that gardeners generally will support the Association and give it a fair trial, not stand aloof and criticise, but help to put it into working order J. G. W., Bessborough.

A PINK-COLOURED CARNATION.—Respecting Mr. Fielder's note on p. 353, I can recommend "Fair Maid" as an exceedingly fine variety to flower during November, and all the year round, so far as I can see of its perpetuity. Fair Maid is of the same type as America, but a very pretty pink shade of colour. The flowers are large enough for any purpose, nicely fringed, and exquisitely fragrant, which is a great point in the variety America. Now as to the lasting qualities of Fair Maid. On Monday, November 14, I received two dozen flowers with stems 18 inches long; they were used in a table-decoration on the 15th, remained at the show till mid-day 17th, and at the time I write (23rd) they are still quite fresh and fragrant. Surely this is a good recommendation for a Carnation in winter! E. M.

JAPANESE LARCH AND DISEASE.—Mr. Simpson enquires where the tree has ever been attacked by the Larch-blighter. As the subject is of considerable importance to planters, I give a short abstract of my observations in Scotland last summer. I visited in all six plantations of Japanese Larch of ages from five to sixteen years, and in no case could detect any sign of canker. There were plantations of European Larch in every case contiguous to those of the Japanese Larch, and the European Larch was badly affected by the disease. I concluded that up to the present Japanese Larch is practically immune from the disease. However, on my return to Kew I received specimens (one tree in each case) from two estates in Scotland of Japanese Larch which undoubtedly were suffering from canker as determined by Mr. Massee at Kew. The specimens are unquestionably Japanese Larch, as there is no difficulty in distinguishing shoots of this tree from those of the common Larch. These specimens are now at Kew. Various species of trees have been attacked by *Peziza*, and it is not remarkable that the Japanese Larch has been attacked in two isolated cases. It would have been a miracle if it had never succumbed to the disease. Practically,

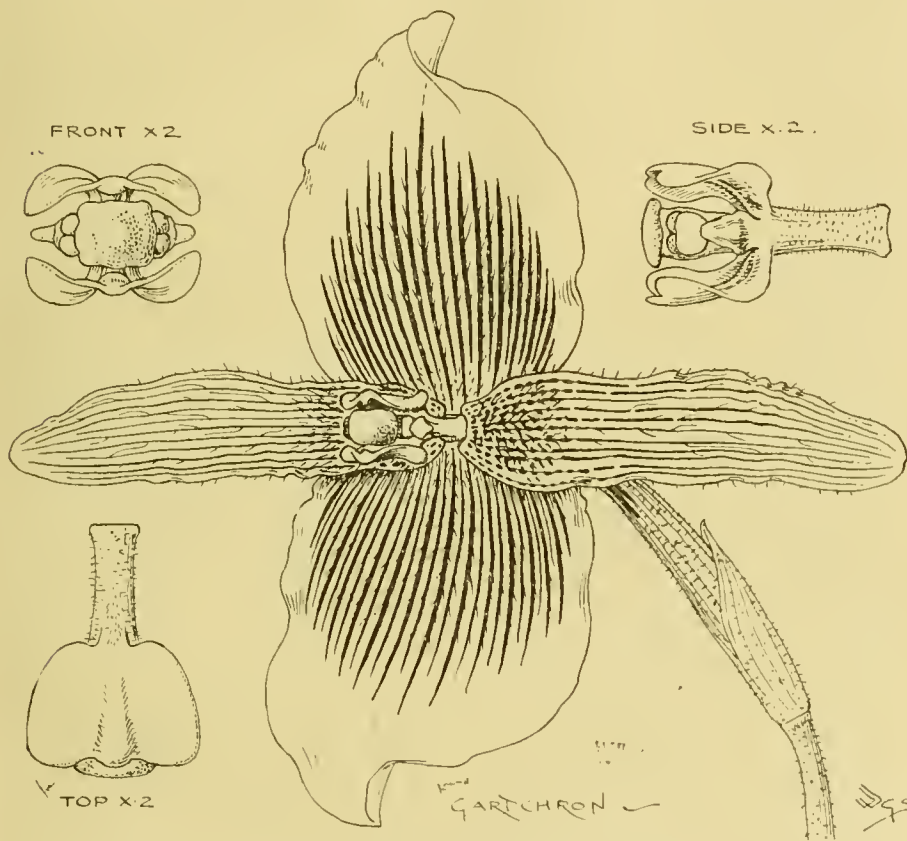


FIG. 175.—A TWO-FOLD FLOWER OF CYPRIPIEDIUM HARRISIANUM ×.

(For explanation see text.)

accepted notion, the column in these flowers potentially consists of six stamens in two rows of three each. Of these six, one of the outer row is represented by the shield-like staminode, which is denoted as A 1, the other two of the outer row, A 2, A 3, being usually undeveloped, though traces of them may be found on examination of the vessels of the column. The three stamens of the inner row are represented in ordinary *Cypripedium* by the two side-anthers, called a 2, a 3; whilst the median, a 1, is undeveloped. The stigma is usually 3-lobed.

In the column of the flower here depicted, the column bears two staminodes, placed fore and aft, A, and belonging to the outer whorl, which is here dimerous. It also bears two anthers, one on each side, a, a, belonging to the inner row of stamens. The stigma is terminal, erect, not turned down, and is somewhat four-angled in outline. The ovary when cut across showed

central square for the stigma. An account of the floral conformation of the genus *Cypripedium*, with special reference to its teratology, was published by the writer in the *Journal of the Linnean Society*, vol. xxii. (1886), with numerous illustrations, but none quite the same as that here represented. Maxwell T. Masters.

Obituary.

CHARLES WARNER.—We regret to record the death of Mr. Charles Warner, of The Nurseries, Leicester Abbey, which took place on December 4. He had been ill just a week with bronchitis, which developed into pneumonia. Deceased was forty-three years of age, and leaves a widow and three children. It is only a little more than two years since his father died.

it may be taken for granted that in Scotland, from Perthshire to Dumfries, Japanese Larch is immune up to the present in plantations varying in age from five to sixteen years. Whether it will continue immune is another question. The specimens of Japanese Larch attacked were one from Perthshire, the other from Dumfriesshire. *Augustine Henry.*

CARNATION "GLACIER."—In further reply to Mr. Fielder as to the synonymy of the Carnations Glacier and Mrs. J. Brooks, I may say that I obtained my original plants from Messrs. W. Cutbush & Son, of Highgate, who of course consider the two varieties to be quite distinct. Perhaps Messrs. Cutbush will favour us with particulars as to the origin of the above varieties. *J. Murray, Sopley.*

TREE BLASTING.—It is surprising that the demolishing of tree-butts by blasting is not more generally adopted. The old method of grubbing and cleaving is a most laborious undertaking, and takes much time to accomplish effectually. The saving in labour and time should recommend the blasting method to those who have this work to do. Mr. Bacon, at Cliveden, near Maidenhead, several years ago successfully carried out the work of demolishing numbers of butts by blasting. The account of the experiment at Stoneleigh Abbey on p. 390 was most interesting, and will doubtless be imitated by others. *F. W.*

RESULTS OF THE SEVERE WEATHER.—Considering that a very mild spell of weather was followed closely by such severe frosts, the damage done to growing crops at Blenheim has not been so severe as might have been expected. But Onions for spring planting have been cut down to within 3 inches of the ground-level. I have never seen them so badly injured by frost. Tom Thumb Lettuces, although planted on a warm border, have their outer leaves blackened. Cos Lettuce planted on a more exposed site have suffered little. Among late-planted Cabbages the weakly plants have been killed outright. The Coleworts and purple Sprouting-Broccoli also show effects of the severe weather. Cos Lettuce in frames and covered with mats were frozen through, but by gradually thawing them whilst keeping them in the dark they have pulled through. Endive that was not covered has been damaged, but will be fit for use later. In the flower-borders all Rose-buds were blackened. *Physalis Franchetti* looked particularly bright when surrounded with snow, but they too show effects of the weather, the calyxes having dark patches upon them. Taking the temperatures (3 feet above ground-level) at 7 A.M. each day, they were as follows:—November 23, 17° F.; 24th, 20°; 25th, 19°; 26th, 15°; 27th, 16°; on the 28th a thaw set in which was very gradual. About 2 to 3 inches of snow fell. *J. W. Miles, Blenheim Palace Gardens, Oxfordshire.*

SEEDS TAKEN BY THE ANTARCTIC EXPEDITION.—It may interest your readers to know that Capt. Scott took out a collection of vegetable seeds in the steamship *Discovery* in 1901, with a view to their being found useful during his stay in southern climes. Some unused portions of these seeds have lately been returned to us by Dr. Koettlitz, botanist to the expedition, and we are surprised to find so little deterioration in their germinative power. Out of 100 seeds, our botanist reports that Radish produces 92 per cent., Lettuce 85 per cent., Turnip 96 per cent., Onion 71 per cent., Mustard 96 per cent., and Cress 92 per cent.; and this notwithstanding the fact that they have passed twice through the tropics, and have been exposed to the low temperature of -40° Fahr. (72° below freezing-point). After passing through such vicissitudes, this enduring vitality can only be put down to the fact that the seeds were specially dried according to the system we employ with all garden seeds intended for the tropics. By our peculiar process excess of moisture is extracted without injury to the germ; and we find, when certain seeds are so treated, their tenacity to life under the most varying conditions is extraordinary. We also pack such seeds in hermetically sealed receptacles, from which the air is thoroughly exhausted. Photograph No. 175 in the expedition's

exhibition, now open at the Bruton Galleries, illustrates some boxes of Mustard and Cress in full growth in the most southerly point at which English seeds have ever sprouted. *James Carter & Co., 237, 238, and 97, High Holborn.*

CONDITION OF EMIGRANTS IN SOUTH AFRICA.—In the issue of the *Gardeners' Chronicle* for August 13, p. 116, I promised to obtain trustworthy information from men on the spot regarding the cost of living, &c., in South Africa, and this information is now to hand. Although I have not received replies from all to whom I applied, I believe it will be sufficient to convince your readers that the note by "One who has been bitten" was misleading. The first letter I received was from Mr. Ridley, foreman at the Municipal Gardens, Capetown, in which he says:—"If a steady and careful young man was receiving £3 per week and rooms, he could, if he liked to do so, save £2 per week; but board and lodging can be obtained at from 25s. to 30s. per week." He also says he knows of married men with children who are comfortable with £3 per week. The second letter is from Mr. Leighton, of King William's Town (626 miles from Capetown); in his letter he says:—"Board and lodgings similar to what nursery hands receive in the old country can be obtained at from 22s. 6d. to 25s. per week. Most of the necessities of life are about the same as when you were here, and groceries are cheaper." Trade is improving, and wages are advancing. As regards the statement that labour is a drug on the market, it may be of interest to your readers to know that when Mr. W. T. Leighton returned to the Cape from this country he met a young man who had a good knowledge of farming, &c. He had no definite employment in view, but Mr. Leighton gave him work at his nursery at 30s. per week and quarters, and soon raised it to 35s.; he stayed ten months, and saved £30 in the meantime. Mr. Tidmarsh's valuable note on p. 228 is full of practical knowledge, and is fully borne out by the above extracts of letters from men who give an impartial statement as to the true state of affairs pertaining to cost of necessities in South Africa. *J. W. Miles, late of South Africa.*

EUCHARIS GRANDIFLORA (AMAZONICA).—We have had a fine show of *Eucharis* lately. Fourteen potsful of plants, ranging from 8 inches to 14 inches in diameter, have flowered during September, some having twenty stems of flowers. There are good gardeners who cannot get their plants to flower or to grow satisfactorily. Knowing that these men are doing their utmost to keep their plants in health, I think the failures may be due to the "hard" water they use, theirs being spring-water and ours rain-water. Our plants are given no special treatment. They are grown in ordinary soil such as we use for bulbs. About February 1 they are put into an early vinery, and there they remain until September, although there is no artificial heat applied after the middle of June, and air is afforded by night and day for the Vines. Afterwards, when put into a warm pit, they throw up their flower-stems in a short time. I have seen plants in a stove temperature all the year round, but am inclined to think a little rest is better for them. I never see any sign of the dreaded mite, nor do we do anything to prevent its appearance. Our plants are from 1 to 5 feet across, and have ample foliage. *John Barnett, October 11.*

LEUCHTENBERGIA PRINCIPIS.—The first plant I ever had was procured from the Royal Gardens, Kew, in the days of the late Sir W. J. Hooker and of the late Mr. John Smith, ex-eurator, in April, 1862. I call it the king of *Leuchtenbergias*, although I have others larger than this one. They are all more or less different, some have longer and thicker tubercles than others, and the spines are very varied, some are very fine for the plant, and some about 3 inches in length, and some 6 to between 7 and 8 inches long, and very narrow in proportion to the one I especially refer to, which is the grandest spined one I know, the spines being 7½ inches in length and about one quarter broad at the base. Some are thicker in the stem; and imported plants are generally marked with old, dried tubercles, showing age, &c. Now my tallest one is 9 inches high and has a very small stem, but

six others are close to the soil, having been grown on from very little plants about forty years ago. Some of the tubercles are now about ½ or ¾ inch long. These were seedlings acquired from a foreign correspondent. A gentleman came a long distance some years ago to see me, being anxious to acquire some, and he gave me five pounds for one of them; another rotted through drip. Now this year, to my surprise, three of these eight all flowered at one time, very early in July. One produced a single flower, another two, and the other three, and they all set seed, five pods. This to me is somewhat mysterious, as I could never get one to do so before, although they flower. They are by some said to be difficult to manage; I grow mine some on a stage with others, but chiefly on a shelf, as the spines get damaged and the plants become unsightly. Some are now against the glass. One flower at a time is common, but two and three are unusual, though one flower is not the limit. The plants grow and flower, and the flower, like that of an *Echinocactus*, is produced from the new growth, just in the centre, on the end of the tubercle. The flowers are of a yellow colour, but they differ somewhat in the stigma. August is about the usual time of flowering and on to September, but I only had four flower this year out of eleven plants. Some show bud very late, and our climate is against them. My place is of necessity somewhat neglected now, but still it affords me a varied source of recreation. *J. C.*

THE FERTILISATION OF TOMATO-FLOWERS.—In the course of an interesting discussion on Tomato culture, which took place at a recent meeting of the Kingston Gardeners' Association, various opinions were expressed as to the causes which not infrequently led to barrenness in Tomato-flowers under glass, and as to the best means of avoiding that trouble. All the speakers admitted that such sterility was not infrequent, and rendered some form of manipulation necessary to overcome it. But there seemed to be put forward three distinct causes for this occasional sterility. First, the too free root-action of the plants in an early stage of growth, producing sappy, soft stems and gross leafage, things which tended to neutralise pollen production and free fertilisation; second, dull sunless weather; and third, and probably the primary cause of sterility, very hot weather causing great aridity in the atmosphere. To correct the first trouble, artificial fertilisation by tapping the stems occasionally during the day to cause the pollen cases to eject pollen that some may be attached to the points of the stigmas, or catching some pollen thus liberated on white paper and transferring it with the point of a camel's-hair brush to the stigmas. The chief difficulty to be encountered in all cases was the scarcity of pollen. In the second trouble, arising from dull, sunless weather, beyond again artificially fertilising it was difficult to advise farther. In the third case, dryness of the atmosphere, several speakers advocated gentle syringing once or twice daily as the best remedy. It was held that pollen grains would not attach themselves to the point of the stigmas unless those points were moist either with water or with the viscid fluid pistils usually emit to catch the pollen. It was also suggested that very hot, dry temperatures under glass neutralised this fluid production. The discussion was very interesting, and gave an opportunity for great variation of opinion, yet diverse actions all seemed to be successful. *A. D.*

WOOD RIPENING.—I notice that some correspondents of the *Gardeners' Chronicle* in their remarks on the fruit crops attribute failure or partial failure to defective wood-ripening, and some of them live in more favoured localities than we in Lancashire. Yet in the absence of the usual admitted conditions for wood-ripening last year we have had good crops, and extraordinarily heavy crops of Morello Cherries on high walls facing to the north, where the sun never shines. It may be thought that in the case of Apples and Pears, some buds producing fruit this year were formed two years ago, but the weather in 1902 in this district was not much better than that of 1903, so we must refer our defective fruit crops to something else. Why should there be so much stress laid on wood ripening when one grower and

writer laments that the Morello Cherry should be allowed to occupy a north wall instead of growing it in the open and utilising the wall space for such fruits as culinary and dessert Plums; and I think Mr. G. Wythes once advocated the planting of Pitmaston Duchess, Souvenir du Congrès, and Marie Benoist Pears on a north wall. How can there be much wood-ripening in these positions, even in the South? If wood will mature on a north wall, surely it ought to do so in the open where it is exposed to all the sun that can shine on it. We have only two Plum trees, excepting those on walls, and these are very old. Those facing east

way. A vacant space occurring on a west wall two years ago, I moved two of the youngest Plum-trees from the east aspect, and though they must be over forty years old they look better in their new home. Cherries do well on the south wall in the natural soil in the same garden; so does the Orleans Plum in another garden. Can anyone explain the behaviour of the Victoria? W. P. R., Preston.

SPIRÆA LOBATA.—There is here an exceedingly pretty little *Spiræa* which attracted my attention when it was offered last autumn in

this dwarf "*Spiræa lobata*," which exactly answered here this summer the description given by Messrs. Cutbush. It appears to be closely allied to the taller *S. lobata* of gardens, and I cannot detect any real difference except in stature. It is a very beautiful little plant, and I shall be grateful to anyone who can tell me anything further about it, especially if it is the true *S. lobata*, and if the plant we have hitherto known as *lobata* is wrongly named. *S. Arnott, Carsethorn-by-Dumfries, Scotland.*

PYRAMID OF PELARGONIUMS

The pyramid of Pelargoniums shown in fig. 176 was cultivated during last summer in the grounds of Clarence Villa, Maidenhead, the residence of Mr. E. R. Lovegrove, and was 14 feet in height, and at the base 6 feet 6 inches square. The plants were chiefly of a pink-flowered Ivy-leaved variety, and they flowered abundantly all the season. Mr. Lovegrove, who is an amateur, states that some of the plants have not been re-potted for eight years past, and he may be fairly congratulated upon the success of the culture he has applied to them.

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 29.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair); Dr. M. C. Cooke, Rev. W. Wilks, Messrs. Gordon, Odell, Mawley, Saunders, Douglas, Bowles, and Chittenden (Hon. Secretary).

TESTIMONIAL TO PROFESSOR HENSLow.—Dr. MASTERS reported on the steps already taken by the Rev. W. WILKS and himself with the view of presenting Professor HENSLow with some token of the gratitude of the Committee to him for his ungrudging labours on its behalf for upwards of a quarter of a century. It was agreed that the Rev. W. WILKS and Dr. MASTERS should carry out the wishes of the Committee, and report to it on a future occasion. In the meantime, subscriptions may be sent to either of these gentlemen.

Galls on *Nepeta Glechoma*.—Mr. SAUNDERS reported on these, brought to the last meeting by Rev. W. Wilks, as follows:—"The galls are by no means uncommon on this plant. They are formed by the grub of one of the Hymenopterous gall-flies belonging to the family Cynipidae (*Diastrophus glechomæ*). The insect is now in the imago state, apparently quite ready to leave the gall in the spring."

Mignonette Disease.—Mr. SAUNDERS reported as follows upon plants sent to the last meeting from Bexley Heath:—"The Mignonette is rather a puzzle. The plants resemble in every particular, both externally and internally, those I examined from another source which were exhibited at the meeting on the 1st inst., but the latter were badly attacked by eelworms. Just at the point where the root ends and the stem begins there was a hollow space, and the cells round it were broken up; in this space, and among the cells, were, in both the plants that I took away, a number of eelworms. I examined nearly, if not quite, a dozen of the plants from Bexley Heath, and in most of them there was the hollow space and the broken-up cells, but not a single eelworm could I find, which surprised me very much. These creatures pass part of their existence in the soil, and it is just possible that they may have left the plants for that purpose. The roots were much curled and twisted about. I could not find any signs of insects or fungi." With regard to eelworms in the soil, Mr. DOUGLAS observed that they were killed if the fresh loam was stacked with London dung while the latter fermented (four loads of loam to one of dung). Mr. ODELL stated that eelworms were often found in the dung of animals fed on Clover-bay, this proving a source of infection.

Fasciated Gourd.—Mr. ODELL showed a remarkable Gourd, which had the stem closely joined to the fruit wall along one side. A tendril was growing from the stem about the middle of its junction with the fruit. All the fruits produced on the plant while it was young were similar to this, but those produced later were normal.

Spotted Pears.—Dr. COOKE reported:—"The Pears submitted to me at the last meeting for report exhibit



FIG. 176.—PYRAMID OF PELARGONIUMS 14 FEET HIGH CULTIVATED IN MR. LOVEGROVE'S GARDEN AT CLARENCE VILLA, MAIDENHEAD.

flower fairly well, but set no fruit worth mentioning; Coe's Golden Drop and Greengage facing west do better. A tree of Victoria Plum, over twenty years old, in an orchard, has rarely a fruit on it. I first bared the roots of those growing on the east wall, and put fresh soil to them; but that had no effect. Seeing that hundreds of fruits attained to the size of Peas, I thought perhaps more lime was needed. The roots were found again, and a liberal supply of lime-rubble was mixed with the soil about them. I lifted the roots of some of the old trees and treated them in the same

Messrs. W. Cutbush & Son's list of new and rare hardy plants. It is again offered in the same list, I observe, and it is again called "*Spiræa lobata* (true)." The following is the description given by Messrs. Cutbush:—"This is a pretty and extremely rare plant, growing about 6 inches high, producing heads of rosy-pink flowers during summer." As will be known to most, the ordinary descriptions of *Spiræa lobata* speak of it as from 2 to 8 feet high, and it is considered synonymous with *S. venusta* of gardens. I am desirous of knowing something further about

no visible signs of disease. There is no decay, and the flesh contains no mycelium. There is no trace of fungi anywhere about them.

Carpenteria, Discused Leaves of.—Dr. COOKE gave the following report upon these:—"The leaves of *Carpenteria* from Dublin are badly affected with leaf spot of a very common kind, produced by a fungus of the genus *Phyllosticta*, although the species is not very decided. In such cases it is advisable to collect and burn all the diseased leaves possible, and not to allow them to remain on the ground, as they are liable to develop a higher form of fructification in the winter, and produce sporidia in the spring, which will attack the young and healthy leaves. Spraying with Bordeaux-mixture in spring at intervals of a fortnight may prevent the spread of the disease."

Apple Scab, &c.—A letter was received from Mr. C. H. HOOPER, in which he, quoting a correspondent in E. Yorks, drew attention to the prevalence of Apple-scab this season, and of moulds on Apples in the fruit-store. His correspondent says:—"I think I shall master it by burning a piece of sulphur the size of a pea on a piece of live coal twice a week. But I have little doubt formalin (40 percent.) is the proper remedy to prevent the growth of fungi in a fruit store. . . . One cannot be too careful about the kind and condition of wood used for shelf-fixing (slate shelves are in use). Many sorts of fungi start from wood." Several members mentioned the great abundance of "scab" this season.

Flora of the Belgian Sand Dunes.—Dr. MASTERS showed a number of photographs illustrating the physical features and flora of the dunes of the Belgian coast, the Botanic Garden at Coxyde, among the dunes, and the means of retaining the sand by the growth of Poplars and other means.

NATIONAL DAHLIA.

NOVEMBER 29.—A meeting of the Committee of this Society was held at the Horticultural Club room, Hotel Windsor, on the above date, Mr. E. Mawley in the chair. Much discussion arose over the request of the Crystal Palace Company that the Society's show fixed for September 6 and 7 do not close until a later hour than 6 P.M. on the second day, being "fireworks day." It was agreed to ask the Company to allow the show to be held on September 7 and 8.

Mr. Wyatt put forward some proposals as to a diverse method of judging seedlings, preferring a small committee and voting by ballot. It was, after much discussion, agreed to retain the present system of open voting, and to instruct the whole of the judges to make awards to seedlings. That subject evoked considerable further discussion as to the practice on the part of a few raisers of showing in their competing stands seedlings not in commerce. That was held to heavily handicap exhibitors who show only varieties in commerce. It seemed to be the opinion of the majority that the proper course would be to have special classes for seedlings, of course chiefly Cactus varieties, staged not only for prizes, but also for certificates. It was urged that the practice of showing seedlings, although named, in common with established varieties was misleading to the public, who in taking names of these would naturally conclude they were already in trade. The schedule for next year's show being already arranged, it was agreed to allow this matter to remain open for the present. That special seedling classes will the following year be adopted seems evident. Some dissatisfaction was expressed as to the formation of the joint committee authorised to grant Certificates to seedlings at the Horticultural Hall at the last September meeting, but it was agreed to leave the matter in the hands of the Chairman. Mr. P. W. Tulloch having resigned the secretaryship, Mr. Curtis is a candidate for the post.

PUTNEY AND WANDSWORTH CHRYSANTHEMUM.

DECEMBER 1.—The annual dinner of the members and friends of this Society took place on the above date at the Spread Eagle Hotel, Wandsworth. The chair was occupied by Rear-Admiral Campbell, R.N., and there were present about 120 persons, including a few ladies.

The toast of "Success to the Society" was proposed by Mr. J. McKerchar, and responded to by Mr. Mahood, Chairman of the Executive Committee.

The next toast was that of "The Officers of the Society," including Mr. Rawlings (Treasurer) and the Secretaries (Mr. J. F. McLeod and Mr. Geo. Reynolds). This was proposed by Mr. R. Hooper Pearson, and from the speeches that followed it was conclusively shown that the recent exhibition was more successful even than usual. The Treasurer stated that for several

years past there has been a steady increase in the annual income of the Society, and there is a small reserve fund at the bank. There is every indication that in the future even greater interest will be shown in the Society's work, and it is noteworthy that after being established so many years the Society now promotes the finest exhibition held in the suburbs of London.

There were other toasts, and these were interspersed in a first-class programme of vocal and instrumental music.

NATIONAL CHRYSANTHEMUM.

DECEMBER 7, 8.—The early winter exhibition of this Society was held at the Crystal Palace on the above dates. The weather was dull and the effects of a dense fog in the metropolis was apparent even as far as Sydenham, producing a depressing effect. The quality of the flowers gave evidence of the waning season for the popular flower, although the exhibits collectively produced a pleasing effect, this being enhanced by the bright displays of non-competitive exhibits. Most of the classes were but feebly represented, and the individual flowers but mediocre in quality; still the exhibition may serve a purpose in maintaining an interest in these useful flowers for a longer period, and give an impetus to the production of late-flowering varieties. Three novelties were recognized by the Committee and awarded the Society's Certificate; these were all of the "market" or "decorative" type.

GROUPS.

The class that called for a group of Chrysanthemums and miscellaneous flowering and foliaged plants, arranged in a semi-circular manner, and having an area of 12 by 12 feet, was represented by two exhibits, those from Lady TATE, Park Hill, Streatham Common (gr., Mr. W. Howe), and from Mr. ROBERT FORSTER, Nunhead Cemetery, S.E., who were awarded the 1st and 2nd prizes in the order named. The premier group contained some well-grown specimen Chrysanthemums, principally of the Japanese type, and was suitably relieved with *Draeagenas*, *Codieums* (*Crotons*), *Palms*, *Ferns*, &c.; while *Poinsettia pulcherrima* gave a bright touch of colour to the whole.

Mr. FORSTER's group was rather more formally arranged. The Chrysanthemum flowers were not so fine in his collection, in which were noticed two well-flowered plants of *Cypripedium insigne* in pans.

Lady TATE was the only exhibitor of a collection of flowering, berried, and foliage plants arranged on a table measuring 9 feet by 6 feet. The display was very bright and was arranged with pleasing taste. The members were principally greenhouse subjects—*Begonias*, *Bouvardias*, *Lily of the Valley*, *Narcissi*, *Hyacinthus albulus*, *Poinsettias*, &c. The judges awarded this exhibit the 1st prize.

CUT BLOOMS.

Only one grower exhibited in the class for twenty-four Japanese Chrysanthemums, Mr. John Simon, gr. to W. W. MANN, Esq., Ravenswood, Bexley, who was awarded the 1st prize for a very commendable collection, considering the season. The varieties included Mme. R. Cadbury, Mrs. F. W. Vallis, Marquis V. Venosta, Mme. Carnot, Guy Hamilton, W. H. Whitehouse (an excellent flower of a light rosy pink colour, with darker centre), Ben Wells, Gen. Hutton (good colour), Aeme, Mrs. W. Mease, Commonwealth, G. J. Mee, Dorothy Pywell (good flower), Bessie Godfrey, Miss Nellie Pockett, Mme. Paolo Radaelli, &c.

The class for twelve Japanese Chrysanthemums, distinct, brought three exhibits, none of a high standard of quality, the best flowers being those staged by LEAR DREW, Esq., Knowle Green House, Staines (gr., Mr. W. Jinks), whose varieties were Guy Hamilton, Mrs. P. W. Vallis, Mrs. Thirkell (a nice flower), Mrs. W. H. Whitehouse, W. R. Church (small), Mrs. A. Mason, Geo. Mileham, Mrs. R. Cadbury, May Inglis, Madame Paolo Radaelli (weak), and Madame Gabrielle Dupré (the best example in the collection). W. W. MANN, Esq., Bexley (gr., Mr. J. Simon), was 2nd.

The class for six Japanese Chrysanthemums, distinct, was represented by only two exhibits—those from Mr. W. G. PRUDEN-CLARK, Ravensclark, York Road, Hitchin; and from Mrs. J. M. FAULKNER, Fonthill Lodge, Honor Oak Road, Forest Hill (gr., Mr. C. Bellis), who won in the order named. The flowers in the 1st prize collection, although bright in colour, were but mediocre in quality, being thin in substance and poor in form.

Incurveds. One exhibit only was shown in the class for twelve "incurved" Chrysanthemums; but this group was of higher standard than any seen in the Japanese classes, and was deservedly awarded the 1st prize. It was shown by W. W. MANN, Esq., Bexley (gr., Mr. J. Simon). The varieties included Ialene, Frank Hammond (good flowers), Snowdrift, Ralph Hatton (weak), Bonnie Dundee (deep yellow), Mr. James Eadie, and Miss N. Southam.

Six bunches of large single-flowered varieties were required to be shown as naturally grown, and without

disbudding. Three entries resulted, one being disqualified for including a variety that was not of the type required. Mr. W. Pagram, gr. to J. COURTENAY, Esq., was 1st, with refined flowers of Earlswood Beauty, Edith Pagram, Fred. Wheatley, &c. 2nd, W. J. NEWMAN, Esq., Totteridge (gr., Mr. J. Brooks). An extra prize was awarded to Mr. R. HENTY, Langley, for a fine collection, which was disqualified for the reason stated.

VASE CLASSES.

There was no competition in the class for six bunches of Japanese Chrysanthemums, distinct, three blooms of one variety to form a bunch. Mr. W. G. PRUDEN-CLARK, of York Road, Hitchin, was the only exhibitor and gained 1st prize.

In a class for six bunches of decorative, spidery, thread-petalled or plumed varieties in not fewer than three varieties, there were three exhibits, the best being that of Mr. C. Brown, gr. to R. HENTY, Esq., whose collection was all of the spidery type. Mr. Taylor, gr. to C. BAYER, Esq., Forest Hill, was 2nd, with a collection of decorative varieties. 3rd, Mr. W. Pagram, gr. to J. COURTENAY, Esq.

For six bunches of small-flowered Pompon varieties Mr. D. B. CRANE was awarded 1st prize; and Mr. PAGRAM, 2nd prize.

The class for a large vase of Chrysanthemums of any type except "Pompon," arranged with suitable foliage, resulted in five admirable exhibits, that of the Earl of CLARENDON, The Grove, Watford (gr., Mr. C. Harris), containing ten Chrysanthemums as good as any in the show. These flowers were of the variety *Devonian*, and were obtained from terminal buds "taken" in August. The flowers as shown appeared to be true "Incurveds."

The best vase of Pompon varieties was set up by Mr. D. B. CRANE, 4, Woodview Terrace, Archway Road, Highgate. Mr. CRANE also had the best basket of Chrysanthemums in Class 18.

There were no entries in the class for twenty-four bunches of Chrysanthemums, and none in that for twelve vases of Japanese varieties.

AMATEURS' CLASSES.

The displays in the various classes were generally very feeble, and competition was poor, many of the classes being sparsely represented. For six Japanese, distinct, four competed, resulting in a local grower, Mr. C. Haselgrove, gr. to W. BRANDER, Esq., 13, Crescentwood Road, Sydenham Hill, winning 1st prize; followed by Mr. W. Trowell, gr. to D. LINK, Esq., Beckenham, 2nd.

Mr. H. Pestell, gr. to F. S. WIGRAM, Esq., Bedford, had the best vase of Chrysanthemums arranged with foliage, &c.

For six Japanese in not fewer than four varieties, and not more than two of any one variety, Mr. PRUDEN-CLARK was awarded 1st. The vase contained among other varieties good flowers of Mme. Paolo Radaelli.

Mr. PRUDEN-CLARK was also 1st for six bunches of any varieties, three blooms of one variety only in a bunch. The examples of Mrs. E. Thirkell and Mme. Paolo Radaelli were good in this exhibit.

Awards.

First-class Certificates were awarded to the following varieties:—

Golden Standard.—This is a yellow sport from Bronze Tuxedo. A market variety having stiff petals with erect growth, of an excellent yellow colour. Shown by Mr. C. E. TURNER, nurseryman, Hale, Liverpool.

Market Gold.—As its name indicates, is a market variety of yellow colour. The flowers are the reverse of the former variety, being looser, and after the nature of a small "Japanese." It is especially valuable for flowering late, many of the flowers being still in the bud stage. A free-flowering habit. Shown by Mr. H. J. JONES, Lewisham.

Charm of the Winter.—A white "decorative" variety. Flowers small but freely produced. The centre is somewhat greenish, a tint which the flower loses in the older stages. Shown by Mr. DAVID INGAMILLS.

MISCELLANEOUS.

Messrs. H. CANNELL & SONS, Swanley, Kent, staged an exhibit of miscellaneous flowering plants. *Begonias* of the *Gloire de Lorraine* type were excellent. There were also zonal *Pelargoniums*, *Chrysanthemums*, *Cannas*, and *Celosias*. A bright and attractive group (Gold Medal).

Messrs. AMBROSE & SON, Cheshunt, Herts, staged a miscellaneous collection, including foliage plants, *Ferns*, *Palms*, &c.; greenhouse plants—*Carnations*, *Lily of the Valley*, *Azaleas*, *Chrysanthemums*, *Ericas*, *Solanums*, &c.; also *Roses*, *Grapes*, and *pot Vines*. *Eucharis grandiflora* was shown well in this collection (Large Silver Medal).

Messrs. J. CHEAL & SONS, Crawley, exhibited a collection of Apples and Pears of splendid quality (Large Silver Medal).

Messrs. JOHN LAING & SONS, Forest Hill, London, S.E., exhibited a similar collection of fruit very tastefully arranged with decorative plants (Silver Medal).

Mr. DAVID INGAMELLS, King's Grove, Maidenhead, staged baskets of Potato tubers in most of the newer varieties (Silver Medal).

Mr. HAROLD D. GOULDEN, 6, Ashley Road, Altrincham, set up a table entirely filled with Chrysanthemum flowers. Most of the types were represented, a feature being the decorative and smaller-flowering types. The exhibit was arranged with good taste (Silver Medal).

Mr. SEWARD, nurseryman, Hanwell, showed a batch of a white "market" variety of Chrysanthemum named Freedom.

GARDENERS' DEBATING SOCIETIES.

ISLE OF WIGHT HORTICULTURAL.—The monthly meeting was held at Warburton's Hotel, Newport, on December 3, when Mr. C. H. Snook, gardener to Mrs. Scaramanga, Westhill, Shanklin, read a paper on the "Cultivation of Chrysanthemums for Exhibition." There was a good attendance of members from all parts of the island to hear Mr. Snook, who is one of the most successful cultivators of the Chrysanthemum in the Isle of Wight. In the course of his paper the essayist explained to the members in a clear and concise way the method he adopted from the selection and taking of cuttings and subsequent treatment to the moment the flowers are arranged on the exhibition board. A communication was read from the Secretary of the British Gardeners' Association. It was decided to discuss the objects of the above Association at a special meeting to be held at an early date. W.

READING AND DISTRICT GARDENERS'.—At the last meeting of this Association, Mr. C. Foster, Horticultural Instructor, Reading College Gardens, read a paper on "Cropping and Inter-cropping a Vegetable Garden." Peas were first dealt with as forming one of the chief crops of the garden, and the suggestions thrown out as to cropping and inter-cropping in connection with this popular vegetable will give an idea of the comprehensiveness of the paper. Between the rows of early Peas, crops of Spinach, Radishes and early Milan Turnips should be taken, and with the second earlies a short-topped early Potato or early Cauliflower such as Erfurt or Magnum Bonum should be grown. After the early Peas are removed, Endive, Lettuce and Spinach should be sown for autumn use. Second early Peas being cleared off at the beginning of August will allow room for winter Spinach and late Turnips. In conclusion, Mr. Foster mentioned that in cropping and inter-cropping a garden the thing to aim at is the production of the largest possible amount in a given space and in a given time, and to reduce the chances of failure each successive crop should be in character as far as possible unlike its predecessor. A splendid collection of vegetables from the college gardens was staged, consisting of Potatoes, Tomatoes, Broccoli, Carrots, Turnips, Brussels-Sprouts, Endive, Chicory, &c.

BECKENHAM HORTICULTURAL.—At a meeting held on November 25, Mr. John Barks read a paper on "Vines and Peaches." The lecturer explained how he established a vineyard at Castlehill. Procuring strong canes in the autumn, he plunged the pots in ashes on the north side of a wall, removing them to the south side in the spring. Early in May his vineyard being ready, the border (an inside one) was made 3 feet wide, with fresh turf chopped 1 inch square, to which was added a sprinkling of crushed bones; the Vines, which were by this time breaking into growth naturally, had the soil removed from the roots, which were spread out and planted carefully. The canes were tied to the wires, not shortened back, but were bent down above a suitable bud about 4 feet above the first wire. No fire-heat was applied during the first season; the buds above the chosen one for a leader were gradually rubbed out. At the fall of the leaf the rods were pruned, leaving 8 feet extension, little nicks being cut just above the lower eyes to ensure their breaking into growth in the following spring. In the second season four bunches of fruit were taken from each rod. Peaches were briefly dealt with, and Mr. Barks caused surprise among some of the members by saying he applied half a pound of nitrate of soda per tree at one dose. F. W. P.

LIVERPOOL HORTICULTURAL.—On December 3 an interesting lecture was delivered by Mr. F. W. E. Shrivell before a large gathering of gardeners. Mr. T. Foster (Chairman of the Association), occupied the chair. Mr. Shrivell's lecture was entitled "Up-to-date manuring." He spoke of good results he had had from the use of chemical fertilisers in conjunction with animal manures. Mr. Shrivell maintained that up-to-date manuring was very profitable, for the expenditure was much less, and the crops showed better results. On an acre of ground manured with twenty-five loads London dung, 4 cwt. nitrate of soda, and 4 cwt. superphosphate, showed an average crop per annum of 40 tons 3 cwt. per acre. Another plot was manured with fifty loads of London dung alone, this yielding an average crop per annum of only 30 tons 7½ cwt. per acre. J. P.

FLORISTS' FLOWERS.

MEMORIES OF THE HOLLYHOCK.

It was in the early seventies that the dread Hollyhock disease (*Puccinia malvacearum*) was devastating the collections of plants about the country. One of the features of the fungus is its rapid germination, and in 1873-74 it appeared to be widely diffused all over Europe, and especially in this country. Nowhere was its virulence more severely felt than in the fine collection then in the possession of Mr. William Chater, at Saffron Walden. So destructive was it that I believe the Catalogue Chater issued in the autumn of 1874 was the last the veteran distributed. It is a remarkable Catalogue, as it contains the names of 109 varieties raised by Chater, and a few by the Rev. Edward Hawke, then an Eastern Counties rector, who afterwards became Lord Hawke, his son being the well-known Yorkshire county cricketer. I have a vivid recollection of how these two celebrated growers of the Hollyhock used to pit their strength against each other at Bishop Auckland in the class for twelve spikes; and such spikes! Shall we ever see the like again?

In 1842 Chater was gardener to a Squire Stephenson, at Stepleburntish, and becoming enamoured of the Hollyhock he began both to grow it and to raise new varieties. The first Hollyhock which it is believed he had in his garden was Napoleon, yellow-and-red; it was of French extraction and rather double. Mr. Chater carefully fertilised this with one of the improved varieties raised by Mr. C. Baron, and the first variety he obtained from seed was named Comet, a rosy-scarlet flower. Finding the Hollyhock rising in popularity, Mr. Chater started in business at Saffron Walden in the early forties, and in 1844 or thereabouts he issued his first catalogue.

Meanwhile Adam Paul, of Cheshunt, was commencing to improve the flower, and raised some fine varieties, but W. Chater distanced all his competitors as a producer of fine seedlings, and he was for years a most successful exhibitor. I visited him at the time the fungus was most destructive, and it was pitiable to see how the stock suffered, fine varieties becoming wholly extinguished, to the great grief of the veteran. Young stock in frames and growing plants went down before the ravages of the Puccinia, never to rise again. Happily for the Hollyhock and those who admire it, the flower is being re-established in public favour. A few of Mr. Chater's raising have survived, and now his successors, Messrs. Webb & Brand, are producing varieties of excellent properties from seed. We may hope to see classes for Hollyhock blooms restored to schedules of prizes, and the time may come when spikes of Hollyhocks will appear on the exhibition table.

It was high cultivation which produced fine Hollyhocks in the past, and will do so again. Old garden soil trenched 2 feet deep, and with the addition of plenty of well-decomposed manure, is favourable to the production of strong growth and fine flowers. It was an old practice to set out the plants in the open in autumn; but if the soil is one retentive of moisture, wet is likely to be injurious in winter; while the Hollyhock is a moisture-loving plant in summer. Old tufts which have flowered are left in the ground to procure stock, and the practice is resorted to of removing the mould round the neck of the plant to the width of 6 inches, and filling up with sand level with the surface, and then the action of wet and also of any harmful insects is not so injurious. Plants of fine varieties propagated in summer are best wintered in a cold frame, and then planted out in March and April; it has been found that they will bloom as finely and as early as when planted out in autumn. R. D.

MARKETS.

COVENT GARDEN, December 7.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	6	0-12	Ferns in var., per doz.	3	0-12
Azaleas	3	0-3 6	Ficus elastica, per doz.	9	0-24
Arbor Vitæ, per doz.	9	0-18	Hyacinths, Dutch, per dozen	12	0-15
Aspidistras, doz.	18	0-36	Marguerites, doz.	6	0-10
Aucubas, per doz.	4	0-6	Narcissus, Trumb., per doz.	9	0-
Azalea mollis, pot, each	5	0-	Orange-trees, each	2	0-15
Begonia Gloire de Lorraine, pr. dz.	8	0-12	Palms, variety, each	3	0-20
Bouvardias, pots, per doz.	4	0-	Poinsettias, per doz.	10	0-
Chrysanthemums, per dozen	6	0-18	Primulas	4	0-5
Cocos	12	0-18	Pteris tremula, p. doz.	4	0-6
Crotons, per doz.	12	0-24	Roman Hyacinths, per box	3	0-
Cyclamen	10	0-12	Solanums, dozen	4	0-8
Cyperus, per doz.	3	0-4	Tropæolum, doz.	3	0-4
Dracenas, variety, dozen	6	0-18	Tulips, red and white, per box	3	0-
Ericas, per dozen	12	0-18			
Euonymus, vars., per dozen	4	0-10			

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Anemones, p. doz.	2	0-4	Marguerites, white, dozen bunches	2	0-6
Azalea mollis, per bunch	1	6-	Mimosas (Acacia), packet	1	6-
— white, p. doz.	4	0-	Narcissus p. doz.	2	0-3
Bouvardias, per dozen	4	0-6	— Soleil d'Or, per dozen	2	6-3
Callas, per doz.	3	0-6	Orange Blossom	0	9-2
Camellias	1	6-2	Orchids, various, per dozen	2	0-8
Caroations, doz.	9	0-60	— Cattleyas	4	0-12
— specials, bunch	3	0-5	Pancratiums, doz.	3	0-4
Chrysanthemum, p. doz. bunches	4	0-24	Pelargoniums, zonal, dozen bunches	3	0-6
Croton Leaves	1	6-2	— white, dozen bunches	3	0-6
Daffodils, per doz.	8	0-9	— double scarlet, per doz. bun.	3	0-6
Eucharis, doz.	3	0-4	Poinsettias, per doz. bunches	9	0-
Ferns, Asparagus, per bunch	0	6-1 6	Roman Hyacinths	6	0-12
— French, doz. bunches	0	3-0 4	Roses, Mermet, per bunch	2	0-5
— Maidenhair, doz. bunches	4	0-6	— red, bunch	5	0-6
Foliage, various, dozen bunches	2	0-6	— white, bunch	2	0-4
Freesia, dozen	6	0-	— pink, bunch	4	0-5
Gardenias, p. box	2	0-3	— Safranons, bun.	1	0-1 6
Honesty, bunch	2	0-	— Sunrise, bun.	1	0-1 6
Lilac, French	3	0-4	Smilax, 12 bunch.	1	6-3
Lilium auratum, per bunch	2	0-3	Tuberose on stem, bunch	0	9-1
— Harrisii, per bunch	3	6-4	— short, p. doz.	0	2-0 4
— lanceifolium	1	0-2 6	Tulips, per bunch	1	0-
Lily of the Valley	6	0-12	Violets, doz. bun.	1	0-2
Marguerites, yellow, 12 bunches	0	9-1 6	— Parma, bun.	2	0-3 6

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen	3	0-	Mushrooms (house), per lb.	0	6-1 2
— Jerusalem, sieve	1	0-	Onions, pickling, per sieve	3	0-4
Beans, dwl., p. lb.	0	10-10	— per bag	8	0-6
Beetroot, bushel	1	0-1 6	— per case	8	6-9
Brussels-Sprouts, sieve	0	6-10	Parsley, per doz. bunches	1	0-1 6
Cabbages, tally	2	0-3	— sieve	0	6-9
Carrots, per doz. bunches	1	6-2	Parsnips, per bag	2	6-
— bag	2	0-3	Potatoes, per ton	60	0-100
Cauliflowers, per dozen	1	0-2 6	Radishes, per dozen bunches	1	0-
Celeriac, per doz.	1	6-	Rhubarb, York., per dozen	2	0-
Celery, per dozen bunches	3	0-10	Salad, small, punnets, per doz.	0	9-
Cress, doz. pun.	0	9	Seakale, per doz.	2	0-
Cucumbers, doz.	4	0-17	Shallots, p. sieve	3	0-
Endive, per doz.	1	0-1 3	Spinach, p. bush.	1	6-2
Garlic, per lb.	0	3-	Tomatoes, Teneriffe, boxes	6	0-14
Horseradish, foreign, p. bunch	1	0-1 2	— English	2	6-4
Leeks, 12 bundles	1	0-1 6	Turnips, doz.	1	0-1 6
Lettuces, Cabbage, per dozen	1	0-1 3	— bag	1	6-2
Mint, per dozen	3	0-	Watercress, per dozen bunches	4	0-

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per bushel	1	6-3 6	Grapes, Muscat A, per lb.	2	0-3 6
— English, sieve or half	1	0-2 6	B, per lb.	2	0-1 9
Bananas, bunch	4	0-10	— Canon Hall A, per lb.	4	0-5
— loose, dozen	1	0-1 6	B, per lb.	2	2-3
Chestnuts, per bag	5	6-14	— Alicante, per lb.	0	4-10
Cobnuts, per lb.	0	4-10 4½	Lemons, per case	8	0-14
Grapes, Gros Colmar, per lb.	0	6-1 3	Oranges, per case	2	0-35
			Pears, per sieve	1	0-2
			Pines, each	2	0-3

REMARKS.—Cucumbers, Brussels-Sprouts, Mushrooms, and Celery are lower in price. Italian, Cherbourg, St. Malo, and home-grown Cauliflowers are now coming in. English Onions per cwt. are 9s. 6d. to 10s. Oregon, per case of Apples, fine, 13s. to 14s.; Californian, per case, 7s. to 8s.; American barrels, 10s. to 14s.; Potatoes (new, from Algeria), per lb., 4d.; Teneriffe, per

cwt., 12s. to 14s. Grape Fruits, per case, 6s. to 8s. Cusard Apples, per dozen, 4s. to 9s. Tangerine Oranges, per box, 10d. to 1s. 9d.; a parcel of Tangerines from Natal on sale. Very few home-grown Pears are now good, the best Pears are in French cases, 8s. 6d. to 12s. 6d. each; Easter Beurré and Californian, cases, 14s.

POTATOS.

Dunbars, 90s. to 95s.; various, home-grown, 60s. to 80s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

Taking advantage of the mild weather, growers are sending in large supplies of pot plants. Flowering plants are unusually plentiful. The supply of Poinsettias this season is considerably greater than it was several years ago. Ericas are good and sell rather better now. Cyclamen being not over plentiful, they are probably being kept back for the Christmas trade. White Marguerites and Begonias are very well-flowered. Chrysanthemums continue plentiful, but they are not now quite so good as the plants sold a few weeks ago. Bouvardias in various colours are well flowered plants. Yellow Daffodils are very good. Primula sinensis and Primula obconica in well-flowered plants are seen. Roman Hyacinths and Lily of the Valley in boxes are good. Solanums are not quite so plentiful, and for best plants there is a considerable advance in price. All kinds of foliage plants are plentiful. Aralia Sieboldi, Grevilleas, Aspidistras, Asparagus (Sprengeri, tenuissimus, and plumosus nanus), and Ficus elastica are all procurable. Palms in all sizes, and Feros continue over-plentiful, and at closing time every morning the market is open there are probably more left over than have been sold.

CUT FLOWERS.

Very large supplies continue to come in, yet there is a disposition on the part of salesmen to ask higher prices, and in some instances they have been able to secure an advance; yet it is evident that buyers will be able to obtain sufficient for Christmas trade without any difficulty, although there may be a limited supply of special sorts. Parma Violets are rather less plentiful, and prices have risen; and a few other sorts which the short spell of cold affected, have advanced in price. Chrysanthemums, of course, are the chief feature in cut flowers, and though those from outside are now practically over, the market is still over-stocked, and the supply seems likely to hold out well until after Christmas at least. Tulips are already seen; Roman Hyacinths are plentiful, and Lily of the Valley is abundant; but the supply may fall off for the Christmas trade. Lilliums seem likely to continue plentiful; also Callas, Carnations, and Roses; but Roses from outside being over, the prices have advanced a little. The variety Safrano and others from France continue plentiful. The imported Narcissus are also abundant. Anemones, Ranunculus, and Corn-flower (Centaurea cyanus), Mimosa (Acacia dealbata), and other imported flowers, continue to arrive in large quantities. Well-berried Holly is already seen in large quantities, and it seems likely to be abundant this season. Other evergreens are coming in plentifully. Hardy Ferns (cut), especially Polystichum angulare, is good. Ruscus aculeatus (Butcher's Broom) with bright red berries is seen. Ivy in long trails, bunches of bronzed leaves, the short branches of the green Tree-Ivy, and green Moss, which at one time used to be difficult to procure, are all plentiful.

FRUITS AND VEGETABLES.

GLASGOW, December 7.—The following are the averages of the prices during the past week:—Apples, American, 10s. to 15s. per barrel; do., Canadian, 10s. to 22s. do.; do., English, 6s. to 15s. per cwt.; do., common, £4 to £5 per ton; Lemons 8s. to 15s. per case; Oranges, Valencia, 9s. to 12s. do.; Grapes, home, 9d. to 1s. per lb.; Alicante, 8d. to 1s. do.; Colmar, 8d. to 1s. 3d. do.; Muscats, 3s. to 3s. 6d. do.; Bananas, 6s. to 12s. per bunch; Tomatoes, 4d. to 10d. per lb.; Mushrooms, 6d. to 1s. 9d. do.; Onions, Valencia, 8s. to 9s. per case.

LIVERPOOL, December 7.—Wholesale Vegetable Market (North Hay).—The following are the averages of the current prices during the past week—prices varying according to supply:—Potatoes, per cwt., Main Crop, 3s. 4d. to 3s. 9d.; Up-to-date, 1s. 10d. to 2s. 3d.; British Queen, 1s. 6d. to 2s. 3d.; Conquest, 1s. 10d. to 2s.; Turnips, 5d. to 7d. per dozen bunches; Swedes, 1s. to 1s. 2d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Onions, foreign, 7s. to 7s. 6d. per bag; Parsley, 1d. to 6d. per dozen bunches; Cauliflowers, 1s. 2d. to 2s. per dozen; Cabbages, 6d. to 1s. do.; Celery, 8d. to 1s. 4d. do.—Fruit: Apples, American, 8s. 6d. to 10s. 6d. per barrel; superior, 13s. per barrel; Canadian, 10s. to 12s. 6d. do.; superior lots, 11s. to 20s. do.; Californian, Newtowns, 8s. 6d. per box; Oranges, Valencia, 6s. to 7s. 9d. per case; large cases, 8s. 6d. to 11s.; Jaffa, 5s. 6d. to 6s. 6d. per box, and up to 7s. 3d. for large fruits; Pears, 3s. to 4s. 9d. per box; Lemons, Messina, 5s. to 7s. 6d. for 300's, and 7s. to 13s. per 300 Valencia. St. Johns.—Potatoes, 10d. to 1s. per peck; Asparagus, 1s. per bundle; Cucumbers, 6d. to 8d. each; Filberts, 8d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; foreign, 6d. to 8d. do.; Pineapples, foreign, 3s. to 5s. each; Mushrooms, 10d. to 1s. per lb. Birkenhead.—Potatoes, 6d. to 8d. per peck; Cucumbers, 2d. and 4d. each; Filberts, 6d. and 8d. per lb.; Grapes, 1s. to 2s. per lb.; foreign, 3d. do.; Tomatoes, English, 4d. and 6d. per lb.; Mushrooms, 1s. do.

ANSWERS TO CORRESPONDENTS.

BOOKS: H. T. Apply for Nos. 1, 2, and 3 of the series *Vegetables for Profit*, published by Messrs. W. H. & L. Collingridge, Aldersgate Street, London, E.C. The books are 1s. each.

CAPE GOOSEBERRY: R. C. W. Physalis peruviana has been grown out-of-doors in warm situations in the south-western counties, but you will find it necessary to cultivate the plants in a greenhouse or associated with Tomatoes in a moderately heated structure.

CARNATIONS: H. & J. Elliott. Judging from the cut specimens received, the scarlet flower England, and the rose-coloured flower The Queen, are commendable varieties, with slightly fringed petals but very little perfume. In form they are good, but the variety England appears to be of very moderate size. Whether they are better than all existing varieties of the same colours we do not know, and in order to ascertain this it would be necessary to have growing plants of these that the habit of growth, length and strength of flower-stems, &c., could be taken into consideration. That the Floral Committee of the Royal Horticultural Society does not insist upon flowers having unbroken margins to the petals is shown by the fact that at the last meeting awards were recommended to varieties with distinctly fringed petals, as was reported on p. 394. The variety "H. Elliott," received later, is the best of the three, being in form and colour very satisfactory.

CARNATIONS: G. G. The leaves appear to be spotted with the cysts containing eelworms. Better destroy the plants and turn out the soil, making use of fresh compost for potting-up other plants.

CUCUMBERS: G. H. H. W. As we stated last week Cucumber fruits are "occasionally" produced without fertilisation of flowers, but it is not general, as you now suggest. If a fruit is found to contain ripened seeds, this fact in itself is absolute proof that fertilisation has taken place. But we suspect you are thinking of artificial pollination, as is done in the case of Melons. If so, then you are right. Artificial pollination is not commonly practised upon Cucumbers, the reason being that in good weather and a freely-circulating atmosphere the transference of the pollen to the stigmatic surface is effected by natural means.

FROST DURING THE LAST TWELVE YEARS: Ewell. During the long frost of 1895 the temperature in the thermometer-screen at Braemar in Scotland registered, on February 11, 49° of frost; at Buxton in Derbyshire, on the same night, 43° of frost; at Barkby in Leicestershire, on February 7, 42° of frost; and at Ketton in Rutlandshire, on one night in February, 40° of frost.

GARDENERS' WAGES: J. H. S. Very unsympathetic treatment, but to ascertain whether it is legal or not you had better consult a solicitor.

GRAPE-ROT: A. H. D. The Grapes appear to be badly infested with "rot" (Gloeosporium), but were allowed to become too bad before being sent, and hence arrived in a state of pulp. Packing soil with them prevented microscopical examination, since the presence of grit everywhere broke the cover glasses. The Vines appear to be in a very bad condition, but we should like to see the Grapes again, choosing some which are not so rotten, and not gritty, so that they may be examined fairly. The soil has nothing to do with causing the rot. All the diseased Grapes that are kept in the houses help to diffuse the disease, and make relief impossible. M. C. C.

MICROSCOPE: G. H. M. Write to Mr. Browning, optician, Strand, London, and enquire for a student's microscope.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers, still less to casual readers, to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits

are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. Northampton. Lord Lennox.—H. K. We think your Apple is Paradise. It is not nearly so good in flavour as many late varieties now in commerce.—E. Lazenby. Yes, it is Beurré Rance. We grow several trees of it.—W. B. 1, Royal Russet; 2, King of the Pippins; 3, Northern Spy; 4, White Westling; 5, Lemon Pippin; 6, Royal Wilding.—Arthur Bailey. The fruit is bruised beyond recognition.—P. B. Flanders Pippin.—Wilkins. 1, Royal Russet; 2, Melon; 3, Lord Derby; 4, decayed; 5, King of the Pippins.

NAMES OF PLANTS: See note under "Names of Fruits."—J. B. S. 1, Abies concolor; 2, A. grandis; 3, A. nobilis; 4, Tsuga Sieboldi; 5, Cryptomeria japonica; 6, Cupressus Lawsoniana; 7, Azara microphylla.—Zero. 1, Rhododendron, probably a variegated form of ponticum; 2, Gaultheria Shallon; 3, one of the forms of the common Yew, Taxus baccata; 4, Spiraea Thunbergii; 5, Daboecia polifolia; 6, Calluna vulgaris.—G. S. 1, Trachelospermum (Rhyncospermum) jasminoides; 2, Francoa? (leaves only); 3, Retinospora squarrosa; 4, Begonia incarnata metallica; 5, Cotoneaster Simonsi; 6, Leucocym aetivum. The specimens without flowers are not fully developed, and we are not certain of the names. The Azalea has probably been injudiciously watered at some time, and the roots have decayed.—R. A. 1, Sarcochilus unguiculatus; 2, Eria reticulata; 3, E. obesa; 4, Dendrobium crepidatum.—Shrub. 1, Snowberry, Symphoricarpos racemosus; 2, S. microphyllus; 3, Selaginella flabellata; 4, S. umbrosa; 5, S. Wildenowii; 6, S. viticulosa.—Rhophala. 1, Asplenium Colensoi; 2, Polystichum angulare; 3, Lastrea atrata; 4, Pteris hastata macrophylla. These are the names commonly used in gardens for the species sent. The other plant is Roupala Pohlil, commonly called Rhophala corcovadensis in gardens.

PERLAGONIUM: Raspail. The leaves exhibit the spores of a white mould, but so delicate that the packing, which was rather rough, has so diffused them that they cannot be found in position, so that we are unable to determine its name and affinity. Probably a spraying or two with dilute Bordeaux-mixture would clear the plants, but at present the parasite is uncertain. When forwarding specimens that will have to be examined under the microscope, extra care should be taken to preserve them from contact with soil or grit. M. C. C.

PROPAGATION OF ARALIAS: C. H. B. The varieties you mention may readily be propagated by grafting them on roots of Aralia spinosa, or any of the strong-growing Aralias. Before grafting is done the roots should be prepared, and placed on a moist base in the propagating-house for a week or so, and the plants from which the scions will be taken should be acclimatised in the house for a like period. After grafting they should be either laid in light sandy soil, or better still potted up singly and plunged in gentle bottom-heat. The moisture in the air in the house should be sufficient for the plants until the grafts have taken, for watering overhead is a dangerous practice during the first fortnight or so.

RAFFIA: J. M. The raffia used by gardeners and florists is obtained from a Palm (Raphia ruffia), a native of the Mascarene Islands.

STEPHANOTIS FLORIBUNDA: H. T. This plant has fruited many times in English hot-houses, and a fruit was illustrated in the *Gardeners' Chronicle*, Dec. 26, 1885, p. 817. The fruit may ripen seeds, and if this be so, you could raise plants from them. They are not edible.

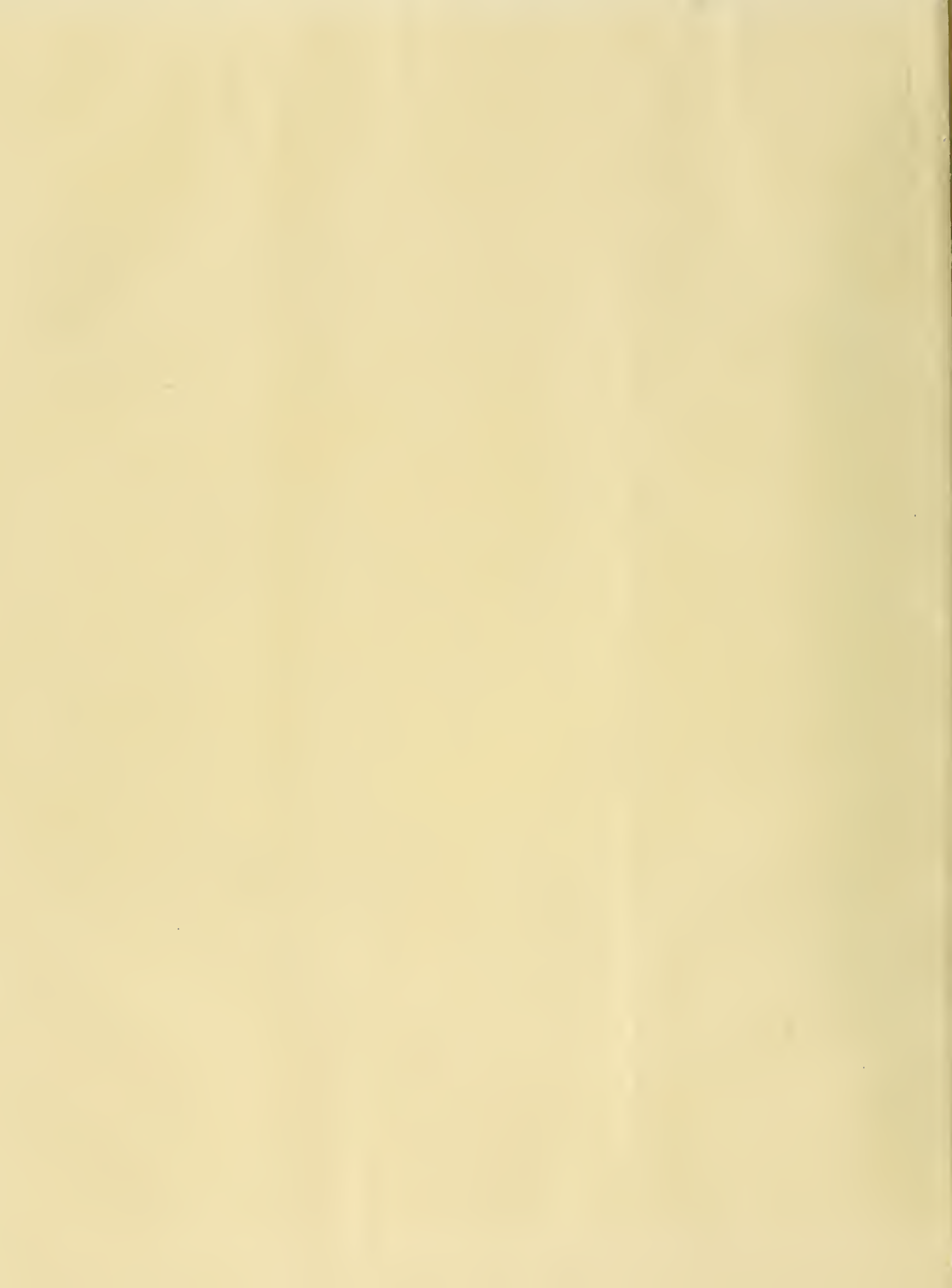
WEEDS ON GARDEN PATHS: W. N. See notes on pp. 312, 327, 353, 393.

COMMUNICATIONS RECEIVED.—R. W. James (your letter has been forwarded)—Paul & Son—Comte de Kerchove—Emil de Wildeman—C. P.—T. D.—Baron S.—Mrs. J. C.—D. Bryson—Chelmsford Gard. Soc.—Constant Reader—Bath Gard. Soc.—G. G.—E. H.—Oxford (next week)—F. W. P.—G. W.—H. R.—S. C.—W. K.—J. Mayne—A. C.—Lockerbie—E. J. A.—W. H. C.—E. M.—Expert—C. H. P.—W. W. Pettigrew—W. W.—W. H.—P. Jordan—L. Gentil (Brussels)—E. F.—E. S.—A. M.—A. C.—Excelsior—J. W. C.—W. B. L.—H. S. J. A.—J. G.—G. H. H.—W. F. H.—W. H. S.

(For Weather see p. viii.)



BOWKERIA TRIPHYLLA, SOUTH AFRICAN HALF-HARDY SHRUB; FLOWERS WHITE.
FROM A SPECIMEN CULTIVATED OUT OF DOORS IN THE ISLE OF WIGHT.





THE Gardeners' Chronicle

No. 938.—SATURDAY, Dec. 17, 1904.

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THE BELFAST BOTANIC GARDENS.

[SEE SUPPLEMENTARY ILLUSTRATION]

PROFITING by a recent visit to Belfast and the courtesy of Mr. Chas. McKimm, the Curator of the Gardens, who very kindly took me round the grounds and through the various houses, I made a few notes which I hope may be of general interest. Undoubtedly the most striking and, in my experience, unique feature is the peculiar arrangement of the plants in the conjoined temperate and stove-houses. In these, in lieu of the usual flat floor arrangement, surrounded by staging, upon which the plants are arranged, or provided with flat beds on the general level in which they are planted, I found myself immediately I entered the doors on a gallery surrounding a deep ravine, with high, sloping sides, and the bottom composed of mounds and rockwork, permeated by winding, roughly-concreted paths. This gallery is open to the general public, while the lower portion, which is reached by a series of rough rocky steps like mountain paths, is reserved for specially conducted visitors. In this way, while the plants

are sufficiently visible to ordinary visitors, they are at the same time protected from the damage inseparable from the usual arrangement. The general effect, moreover, is greatly enhanced, since it gives a splendid idea of a tropical or subtropical glen, from the depths of which the larger vegetation springs, and towers up to a considerable height above the beholder's head, the whole being covered by a lofty span-roof devoid of any obtrusive intermediate support. The two houses are quite separated by similar banks carried up to the gallery level, while the upper dividing wall is masked by a mass of vegetation rooting into wall pockets or trailing over it as climbers. In the temperate section, which measures 110 by 45 feet, there is at one end a lakelet of water and a naturally-constructed cascade, while the humidity of the atmosphere, apart from its maintenance by sprinkling and general watering of the rock-masses which nearly fill the space beneath, can be increased by a series of fountains in the pool.

The stove or tropical section is 75 by 45 feet, and is on similar ravine-like lines, but at the upper end a raised section forms an extensive Lily-tank, beneath which is the boiler-house, the boundary wall being covered with plants, thus completing the vista in a very charming and appropriate fashion, a dense tapestry of Nephrolepis, Ficus repens, Begonias, and similar growths completely hiding the brickwork.

To turn now to the plants, which are each and all in good condition, perhaps the most striking is a number of Bananas (*Musa Ensete*), which are so much at home in both tropical and temperate sections that they form huge plants 20 to 30 feet high, with leaves 10 or 12 feet long, and trunks quite a foot in diameter at the ground-level. On viewing these splendid specimens it almost takes one's breath away to learn that the entire growth only occupies a single season, small suckers a few inches high being pointed out as the successors of the veritable trees at whose bases they originate, while the old cut-down stumps interspersed indicate their predecessors of but a year ago. From these plants, now in their prime, long pendulous bunches of fruits were hanging, each tipped by an enormous yellow inflorescence. This, however, being a wild species, only produces inedible small fruits, though the edible kind (*Musa Cavendishii*) was also represented by a fine plant not yet in fruit. Mingled with these towering juveniles, which would seem to have been fed with Mr. H. G. Wells' "Food of the Gods," so much does their size belie their age, were many equally lofty and grand specimens of Tree-Ferns, *Alsophilas*, *Cyatheas*, and *Dicksonias* of several species, *Methuselabs* by comparison, but still in their prime, to judge by the spread of their fronds and the vigour of their growth: while *Lantanas*, with *Chamarops* and other Palms, intervened to enhance the jungle-like look of the ravine on somewhat different lines. Bamboos in numerous species threw up their grass-like spikes in profusion by way of a change. Here and there fine specimens of *Monstera deliciosa* displayed their curiously-perforated foliage and conical bunches of fruit. The deadly *Upas-tree*, about which so much fabulous lore exists, is found here as a perfectly innocuous speci-

men, a harmless-looking plant enough, and permitting of quite close inspection without the least necessity for a danger-signal to visitors; nor could we detect any dead birds or animals in its vicinity, the victims of its poisonous exhalations. So much for fable.

Cycads, too, are in fine form, and one *Cycas revoluta* bore a splendid bunch of its curious fruitage, seated in the centre of a wide-spreading circle of decumbent spiky fronds. The actual individual fruit is not unlike a Plum in form and colour, but these appear in a large, semi-rotund bunch over a foot across, the Plum-like fruits peeping through a number of fulvous, brown pinnate bracts, and giving as a whole the idea of a deftly-arranged dessert-dish full of Plums, and decorated with dried Fern-fronds inserted all over between them.

To attempt to name a tithe of the numerous and beautiful plants in both houses would take too much space, but I cannot refrain from alluding to some which clothed the sloping side banks and middle rockwork with delicate foliage. Seen from above, wide-spreading sheets of *Selaginella Martensii*, *Krausiana*, and other species, completely hide the rocks and soil, and throw up into grand relief numerous fine examples of *Begonia Rex* and similar beautiful foliage plants, while clambering freely about among them I saw the pretty pink variegated foliage of *Cissus discolor*. Nor should I omit to mention the fine specimens of the Screw Pines, and especially of *Pandanus Veitchii*, and the multitude of smaller exotic Ferns, *Asplenias*, *Nephrolepis*, *Microlepias*, &c., which push their feathery frondage through masses of bright-hued *Caladiums*, *Anthuriums*, and scores of other handsome foliage plants. Overhead too hang in festoons innumerable climbing plants rooted in the surrounding galleries, and spreading far and wide to hide the tie-bars, &c., of the roof. *Bougainvilleas* with their rosy inflorescence, *Ipomoeas* like a glorified Morning Glory *Convolvulus*, *Abutilons* with their curiously variegated leaves, *Passion-flowers*, *Aristolochias* with their odd-shaped flowers like birds and Dutchmen's pipes, &c.; a number of hanging baskets also breaking the sky line as it were by accommodating specimens of pendulous Ferns and Pitcher-plants, of which latter there is a good collection. Finally, as regards these houses, I must recur to the Lily-pond, wherein is a fine plant of the *Victoria Regia* Lily with enormous circular leaves, and a strange-looking colony of the floating *Pontederias* in the background, like huge green vegetable bubbles which have developed leaves.

Tearing myself reluctantly away from these glimpses of the tropics, I next went to the conservatories, a fine range consisting of a central circular house, surmounted by a dome of peculiarly graceful outline, whence on each hand stretches a wing, the one devoted to plants requiring cool culture, the other to stove plants. Here are choice specimens of the more popular tribes of the floral world, one and all distinguished by their peculiarly clean and healthy appearance, though the season was of course too far advanced to permit of their floral beauties being seen to the best advantage. I then proceeded to a range of greenhouses devoted to purposes of storage and propagation, wherein a large stock of decorative

plants of all kinds was stored for use when necessary on civic and other festive occasions.

In the grounds, which cover about 20 acres, there is a pretty lake stocked with aquatic fowl, and a range of rockeries containing a choice collection of alpine plants, which must be very charming in the spring and summer. A long stretch of bed is also devoted to a collection of British Ferns; but these unfortunately are in a somewhat too exposed position, and some of the species, moreover, would be more at home in a position broken up by rocky projections and less level in character. In another part of the grounds botanical instruction is provided for by a series of beds allotted to the various plant-genera and their representative species; while the general aspect of the whole is enhanced by the presence of a large number of representative specimens of trees of many species.

Attached to the gardens is a large hall available for festive occasions, and this is frequently the temporary home of much of the floral stock, Mr. McKimm being a past-master in the arrangement of this kind of natural decoration. *Chas. T. Druery, V.M.H., F.L.S.*

THREE-SPORED RUSTS.

A RECENT Bulletin of the United States Department of Agriculture,* calling attention to a particular species of rust, or Puccinia, states that probably no other species of all the Uredineæ is more interesting than this one, and certainly none that has been more perplexing. "In this species," it says, "there are three distinct spore forms, aside from any æcidium or spermogonium that may possibly exist—true uredo and teleuto stages, and a peculiar one-celled form, different from either of these." It goes on to state that no true uredo stage was known or reported until 1890. In certain seasons and localities the teleuto stage also is almost or entirely lacking.

The species was first described by Peck as a *Uromyces* (*U. Brandegei*), from material which contained only the third spore form. Afterwards Professor Farlow discovered the two-celled spores, associated with the third spore form, and then called or renamed it *Puccinia vexans*. At that time the true uredo stage had not been discovered. Without following the whole development of its history, we may state that all three forms are at present known—the uredo form, the true teleuto form or Puccinia, and the third spore form, for which the name of amphispore has been proposed and adopted by Arthur and Holway in their descriptions of American Uredineæ, and at the same time they record the discovery of another and analogous three-spored species in *P. tripsaci* (D. & H.).

The amphispore is stated to be "distinct from either of the other forms in structure and appearance, and yet resembles both in some respects. It is larger than either of them, is strongly papillate, and has a much thicker cell-wall, but on the other hand possesses the colour and persistence of pedicels of teleutospores, and appears to have pores like the uredospores."

We call attention at the present time to this peculiar species for the purpose of instituting an analogy and drawing inferences therefrom.

Many years ago Professor Passerini found in Italy a rust on the leaves of Peach and Almond which had what appeared to be teleutospores of the clavate form, with a thickened epispore at the apex, and a rather persistent pedicel, such as is not unusual in the genus *Uromyces*, and this rust he called *Uromyces Amygdali*. At the time he had evidently not the slightest suspicion that

it was in any way related to *Puccinia Pruni*, since none of the bicellular teleutospores of that Puccinia had ever been found in its company.

Later on, specimens of Peach-leaves were sent to this country for determination from the United States and Australia, and these exhibited the same rust with clavate *Uromyces*-like spores, associated but sparingly with uredospores. Consequently in both instances these specimens were referred to the Italian type, and were named *Uromyces Amygdali*, of Passerini. This determination was not permitted, however, to rest, for in the course of time certain Continental authors suggested that this rust on Peach-leaves must be a form of *Puccinia Pruni*, with one form of Uredospore on Peach-leaves and another form on Plum-leaves, so that it was truly a species of Puccinia with two kinds of uredospores, according to its host. Others there were who asserted that the so-called spores were not spores at all, but paraphyses of an unusually definite and persistent character.

As far as we are concerned, the latest development of the controversy has been the receipt for the first time of a solitary Peach-leaf which carried upon it the three forms of spores: the

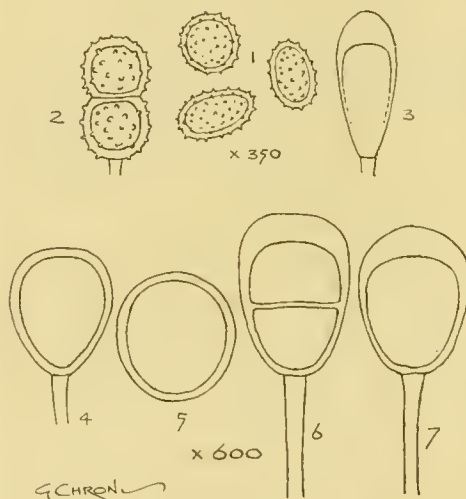


FIG. 177.—THREE-SPORED RUSTS.

1, Uredospores of *Puccinia Pruni*; 2, Teleutospore; 3, Amphispore of same fungus; 4 and 5, Uredospores of *Puccinia vexans*; 6, Teleutospore; 7, Amphispore of same fungus.

uredospores and the well-known teleutospores of *Puccinia Pruni*, mixed with the clavate, uredospores of the so-called *Uromyces Amygdali*. This leaf was forwarded to us from Australia with a printed pamphlet called *Some Misconceptions concerning the Uredospores of Puccinia Pruni*, which furnishes the evidence that its author has some misconceptions on more than one point.

Considered by the light of *Puccinia vexans*, we are prepared to suggest the same interpretation as that which has been accepted with respect to that species, and that the third form of spore, resembling that of *Uromyces*, is an amphispore, and that *Puccinia Pruni* is the third known species of Uredineæ, which is virtually three-spored, and fulfils the conditions quoted at the commencement of this note: "There are three distinct spore-forms, aside from any æcidium or spermogonium that may possibly exist—true uredo and teleuto stages, and a peculiar one-celled form, different from either of these." With reference to the rare appearance of teleutospores on Peach-leaves, an observation may also be quoted which had reference to *Puccinia vexans*: "In certain seasons and localities the teleuto stage also is almost or entirely lacking." After giving these observations all the consideration which they may be considered to be worth, "let each be persuaded in his own mind." *M. C. Cooke.*

CHRYSANTHEMUMS.

WE are pleased to receive a copy of the Proceedings of the second Annual Meeting of the Chrysanthemum Society of America, as it is further evidence of the recent awakening of a Society of which much was expected, but which for some few years was almost inactive. Its first annual show was held in Chicago, the next in New York, and within the past few weeks a third show took place in Boston, in each place the shows being held in conjunction with that of the local Horticultural Society.

The first report has already been noticed, and among other matters it contained the text of various papers read at the Chicago Convention. The second report has only recently been issued, and is based on somewhat different lines. Its contents are briefly the Presidential address, the Secretary's report, a list of varieties certificated in 1903, Treasurer's report, a lecture by Professor Stone, of Amherst, Mass., on "Diseases of Chrysanthemums;" list of officers, the awards of the New York Show, and, what we have so long been hoping for, an official catalogue of varieties grown in America.

It is now just twelve years since the Society, under its older title of American Chrysanthemum Society, issued a catalogue, which in style was not much unlike one of the earlier catalogues of our own English National Chrysanthemum Society. As years have gone on, so of course have American growers been flooded with new varieties from their own and foreign raisers. The present list, therefore, although it may, as its compiler, Mr. Elmer D. Smith, suggests, be incomplete, is an up-to-date list, and will give much matter of interest to those of us on the European side of the Atlantic who have occasion to deal with the Chrysanthemum in a more extensive way than a merely cultural one. We only await the promised catalogue of the French National Chrysanthemum Society to have before us records that have become almost impossible for any one individual to keep. The new American list occupies the major portion of the Proceedings, 106 pages being taken up by it. It is divided into two divisions—the first devoted to American, and the second to foreign varieties. The information given is fairly full, except that the descriptions are almost wholly limited to colour. The name of variety, the name of the distributor, that of the raiser and the date, section, and colour are recorded. In case of sports they are distinguished by an asterisk. The arrangement is the same as that adopted by M. de Meulenaere, of Ghent, and our own National Chrysanthemum Society in its alphabetical list, viz., that the name appears under its surname or proper name, all titular or adjectival names being placed afterwards. Thus, to take a modern example, Mrs. F. W. Vallis appears as "Vallis, Mrs. F. W.," a much more reasonable plan than the old style.

President Herrington, in his addresses, gives us the impression of an enthusiast. He says, "Could we not enlarge the scope of our publication, make it a Chrysanthemum Year Book, and therein review the season of the flowers, enumerate the new ones as they appear, and describe them in a few terse but readable articles that would tell more, and with better effect, than the conventional catalogue descriptions?" We heartily sympathise with his desire, but are reminded of the fate of the American Chrysanthemum Annual, compiled with so much care by Mr. Michael Barker, and the National Chrysanthemum Society's Chrysanthemum Year-book, which was published here the same year. How is it that the average "mummer" has no literary interest in his flower? Do the big money prizes constitute the only interest he has in the subject?

Mr. Herrington adds:—"We extol the fact that the literature of the Chrysanthemum surpasses

* Bulletin No. 63, July 12, 1904.

that of any other flower." We fear that this is the exaggeration of an enthusiast, unless he means the mass of literature that appears in the gardening periodical Press. If this is so, we should agree; but the independent literature of the popular autumn flower can boast of no such treatment as that accorded to the Rose. Sixpenny and shilling pamphlets there may be in considerable numbers, but as yet a Redouté has never devoted his skill to the Chrysanthemum. And yet what a mine of artistic wealth there is to work upon! X.

SINGLE-FLOWERED CHRYSANTHEMUMS.

As I have always advocated the cultivation of single-flowered varieties, it is pleasant to see how they appear in increased numbers at the shows, and how eager the public is to inspect them. The flowers themselves are so well adapted for decoration in a cut state, either by themselves or mixed with other flowers, that they have only to be seen to be appreciated. At one time it was said the colours lacked brightness; that cannot be said now, as the new varieties of the past few years include some especially bright colours. Almost every society now includes a class in their prize list for this section, and when the flowers are arranged lightly in vases with some added foliage it is quite one of the most interesting classes. Occasionally some well-grown and freely-flowering plants are seen, and they are always admired.

Quite an unique exhibit of this section was made at the York show by Mr. G. Russell, gr. to Sir Charles Reed, K.C.B., Dringthorpe, York, who staged "not for competition" three dozen specimen plants, some of them measuring 4 feet in diameter, and appearing one mass of flower. I noticed the extremely small pots in which the plants were growing, and the quantity of dense green foliage they were furnished with, as well as the great size of the individual flowers. The plants being arranged on the floor of the hall in a bold group, with specimen Palms placed at the back, made quite a feature in the show. The following are some of the most striking varieties: Mary Anderson (pale pink colour), and its yellow sport, Miss Annie Holden; Miss Rose (pale pink, of huge size), Mrs. G. Russell (a rose-pink sport from Miss Rose, and a valuable acquisition), Emily Wells (clear pink colour), Edith Pagram (rich pink colour; this plant was growing in a 6-inch pot, and carrying fourteen flowers, each one fully 5 inches in diameter), Purity (having pure white flowers, was a similar plant), Nora (rose-purple, was very showy), Scarlet Gem (having very bright, rather small flowers), May Wells (bright red), Ladysmith (pink), Rev. W. Remfrey (deep crimson-maroon), Sir George Bullough (clear yellow, flat florets), Mrs. E. Roberts (blush-pink, cupped flowers), Mrs. Field (opening creamy-white, changing to pure white), Emily Clibran (bronze-chestnut colour), King of Siam and Earlswood Glory, with flowers fully 6 inches across, and of the purest white.

At the same show, in the classes for cut flowers, there were many worthy exhibits, such varieties as Earlswood Beauty (primrose), Victoria (pale yellow), Mrs. H. Parkinson (bright yellow), Bronze Mary Anderson, Miss Blodwen Jones (pure white), C. P. Dewhurst (pale pink), and Miss H. N. Sullman (palest of primrose, with pointed florets).

At Weybridge this section was remarkably well represented. I noticed the following varieties:—Mrs. Walton (deep rose coloured), Grace (pure white), Elsie Neville (terra-cotta-red), and Eureka (pure white).

At Cardiff some excellent varieties were staged, including Felix (red shaded with bronze), Ewan Cameron (faint blush), Victoria (having a white centre edged with pink), Captain Allsopp (of rich yellow colour), Framfield Beauty (rich crimson), and Herbert Henderson (rose-lilac).

Other desirable varieties are:—Miss Beattie Rowdon (rosy-red with a band of yellow colour at the base of the florets), G. W. Forbes (rich crimson shaded with amaranth), May Richardson (a new shade of terra-cotta, quite a desirable variety), Clibran's 20th Century (golden-bronze shaded yellow, late flowering), Milly Agate (blush), Pretoria (deep yellow), and Miss Cissie Briscoe, with Cactus Dahlia-like florets of a pleasing pink colour. *E. Molyneux.*

STATICE ARBORESCENS.

This plant was collected by Berthelot in the two islets situated close to the land in the small bay of Burgas, near Port Orotava, Teneriffe. It had disappeared from the mainland of Teneriffe, and for many years it has also vanished



FIG. 178.—STATICE ARBORESCENS.

from its last resting-place, owing to the goats having been placed to graze on these islets.

The other very similar but much smaller plant, *Statice fruticans* or *frutescens*, is only to be found now on the rocky sea promontory called "El Frayle," beyond Buenovista, Teneriffe. This plant used to be found at other places in the island, and the botanist Mann collected it, along with *S. macrophylla*, on the coast opposite to the rocks of Burgas.

Having for some years past cultivated the rare Canary *Statice*s, and experienced how easily they hybridise in my garden and elsewhere, even when grown at considerable distance from one another, it has struck me that possibly the tall *S. arborescens*, Broussonet, figured by Berthelot, was not a distinct species, but a hybrid between *S. macrophylla* and *S. fruticans*, especially as both the latter were found by Mann growing wild near the Bay of Burgas.

I have carefully observed several plants of *S. fruticans* under cultivation, and they are invariably small plants, certainly not developing to anything like the size of *S. macrophylla* or *S. brassicifolia*. It certainly could not have

been the plant which struck several botanists as being so tall.

On the other hand I have had occasion to prove how easily *S. fruticans* hybridises with all the other Canary *Statice*s (*S. macrophylla*, *S. brassicifolia*, *S. macroptera*, *S. imbricata*). It hybridises to such an extent that for two or three years I was unable to reproduce *S. fruticans* true from the seed of even a solitary plant I had in my garden. All the seed sown produced invariably hybrids. I have further remarked that, grown by itself away from other plants, a solitary Canary *Statice* does not seed readily. Seed is then extremely scarce. I have repeatedly observed this.

I was first struck by the enormous difficulty I had to find seed in the ripe panicles of a very remarkable and very old and tall *Statice*, which still grows in the Botanic Garden of Orotava. This plant is certainly a hybrid between *S. macrophylla* and *S. fruticans*, and exactly resembles the plant pictured by Berthelot. It is over 6 feet high, and very handsome when in flower. The four *Statice*s shown in the accompanying photograph [unsuitable for reproduction] were all obtained from seed from the old *Statice* growing in the Botanic Gardens above mentioned. *George V. Perez, Teneriffe.*

FRUIT REGISTER.

APPLE LANE'S PRINCE ALBERT.

SEEING that Lane's Prince Albert Apple came out at the head of the list in the census of cooking Apples, a few words about the origin of this valuable Apple may be interesting. Prince Albert was not raised by the late Mr. Perkins, of Northampton, as one might be led to believe from your correspondent's letter on p. 333, where it is described as Perkin's Seedling, but was raised from a "pip" [seed] sown in the year 1841 in a garden at the rear of a dwelling-house in the High Street, Great Berkhamstead, within 100 yards of Messrs. H. Lane & Sons' nursery. It was named by Mr. F. Q. Lane's father in commemoration of Prince Albert, who, with the late Queen Victoria, passed through Berkhamstead in the year 1841 on their way to Stowe Park, Buckingham, and stopped at the King's Arms Hotel to change horses.

The original tree of Prince Albert is still standing and bearing fruit. There is probably no Apple which gives such a return year after year on any soil and in any situation as Lane's Prince Albert. The fruits keep sound until March, and their cooking qualities leave little to be desired.

Newton Wonder and Bismarck are both good, and will keep longer than Prince Albert, but they are not so reliable [as croppers]. Dumelow's Seedling (Wellington) is also very good, but cankers badly in this district. *F. G. Gerrish, Pendley Gardens, Tring.*

PEAR WHITE DOYENNÉ.

The introduction of new varieties of Pears, which may be of large size and handsome appearance, oftentimes causes older and tried varieties to be overlooked. Among older varieties worth growing is White Doyenné (with numerous synonyms according to the description in the *Fruit Manual*). It is a Pear which should find a place in all private gardens, as it is one of the best in its season—September and October, or later, according to the locality wherein it is grown, and also if growing against a wall or in an open position.

Dr. Hogg very accurately describes it, both in flavour and appearance. The fruits are above medium size, and if grown on cordons, some very fine fruit can be obtained; while from cordons on a wall the fruits assume a bronzy-red colour on the side exposed to the sun. The flavour is equally good whether from trees in the open or when grown

on a wall, but somewhat richer when exposed to the sun on a wall. Like most of the early Pears, the fruits are best when gathered as required for consumption from the tree.

In conversation with Mr. Bannister, of Westbury-on-Trym, at the Royal Horticultural Society's Fruit Show, he spoke very highly of a Pear which his employer preferred to any other in its season. He stated that he found it in Mrs. Ames' garden some thirty-six years since. He called it Autumn Nelis, and promised to send me a sample, which on arrival proved to be White Doyenné. I can endorse Mr. Bannister's opinion of it for quality, &c., and much prefer it to some of the new Pears, which ripen in the same season. Our trees are on the Quince stock; they crop regularly but do not make much growth. Dr. Hogg describes it as an abundant bearer, succeeding on Pear and Quince stocks. T. H. Slade, Pollimore Gardens, Exeter.

SOILS AND MANURES FOR SPECIAL CROPS.

(Continued from p. 244.)

As a general statement it may be said that salad plants require cool, moist soil, and a quick continuous growth if the best results are to be obtained. They are often benefited by a special application of quickly available fertilisers during growth, particularly of nitrogen, in those species which are desired chiefly for a quick growth of leaves.

LETTUCE.

The plant to which we now desire to call attention is one of these salad crops, the Lettuce, which is a hardy, cool-season, short-season, succession or companion crop, requiring mellow, moist soil, quickly available manures and continuous growth from start to finish. The characteristic of Lettuce is the enormous quantity of water which the fresh plants contain. The following shows selected constituents in the roots and heads of Lettuce:—

	ROOTS.	HEADS.
	Per cent.	per cent.
Water...	58.870	91.960
Nitrogen ...	0.224	0.222
Phosphoric acid ...	0.121	0.084
Potash ...	0.306	0.565

In 1 ton of Lettuce as gathered for market, there is about 134 lb. of dry substance, 5 lb. of nitrogen, 2 lb. of phosphoric acid, and 8 lb. of potash. To supply this amount of plant-food to the soil for the production of 1000 plants, there would be required—nitrate of soda, 9 lb. 13 oz.; superphosphate, 2 lb. 15 oz.; and sulphate of potash, 3 lb. 8 oz.

SOIL AND MANURE.

For forcing house Lettuce the physical condition of the soil is fully as important as for the Chrysanthemum. Experiments have been made with a great variety of soils, but a light or medium clay loam appears to give the best results. It is important that the soil should be of such a nature as to offer but little resistance to the passage of roots through it. Soils have been employed consisting of coal-ashes and peat, to which various fertilisers have been added. This has not been so productive of good results as was the case with Tomatos; possibly because of the resistance which the ashes offered to root-growth. The very general compost of three parts medium clay-loam and one part well-rotted manure has been used for Lettuce, although the proportion of manure should doubtless be much increased, or certain mineral fertilisers should be added to the compost.

Experiments dealing with fertilisers for Lettuce have yielded some apparently very conflicting results. One set of results indicates stable manure as the best kind of fertiliser; while another shows good results when only mineral fertilisers have been used. A careful study of

the reports suggests, however, that the discrepancy is probably one of interpretation.

As sources of potash, the chloride and the sulphate of potash, the carbonate of potash and magnesia, and wood-ashes have been used.

The sulphate of potash seems to give the best results. Concerning the chloride, general opinion is that it is distinctly injurious. Prof. Stuart found that when he added chloride of potash alone, or with nitrate of soda, at the rate of 1,026 lb. of chloride potash and 1,503 lb. of nitrate soda per acre, he obtained smaller plants than from the unfertilised check plots. This is not, however, to be considered as showing the injurious action of the chloride, but is rather indicative of the unbalanced character of this fertiliser. For when to this same amount of potash and nitrogen was added superphosphate at the rate of 1,500 lb. per acre, a luxuriant and abundant growth was obtained.

Phosphoric acid seems to be furnished with equal benefit, either in the form of basic slag or superphosphate, but for early and quick-acting growth high grade superphosphate appears to answer best.

Experiments with nitrogenous fertilisers have led to quite diverse results. By some nitrate of soda and sulphate of ammonia are preferred, while many others give farmyard and stable-manures the preference. In a recent report the use of organic sources of nitrogen have been advocated, since in the aggregate larger and better yields have been obtained with farmyard manure or dried blood than with artificial chemical fertilisers. Because better results were obtained in all cases when from 5 to 20 per cent. of manure was given in addition to the commercial fertiliser, it has been concluded that farmyard manure is not only advantageous but necessary. The conclusion is not, however, well founded. To begin with, the amount of mineral fertiliser added to the loam was very small. Again, there is no record of any experiment in which the amount of mineral fertiliser was increased to correspond to the addition of farmyard manure. Only by means of such an experiment could the relative value of organic and inorganic sources of nitrogen be determined. The results of Professor Stuart with mineral fertilisers show that such may be used with advantage, provided the fertiliser is given in sufficient quantity, and the elements are in the proper ratio to each other.

The formula used by Professor Stuart with such good results is to be recommended for indoor culture of Lettuce. To a good loam the following ingredients were added to every acre of soil (6 inches deep): nitrate of soda, 1,503 lb.; superphosphate, 1,503 lb.; muriate of potash, 1,026 lb. This makes, approximately, the following ratio per cubic yard of soil: nitrate of soda, 2 lb.; superphosphate, 2 lb.; muriate of potash, 1½ lb.

It has been constantly noticed that Lettuces grown with the aid of nitrate of soda and dung have been much crisper and more tender than those grown with dung alone. J. J. Willis, Harpenden.

FOREIGN CORRESPONDENCE.

THE BRITISH GARDENERS' ASSOCIATION.

I WAS gratified to read in the *Gardeners' Chronicle* that numerous branches of the British Gardeners' Association are in process of formation, as I firmly believe that this endeavour to raise the status of the gardening profession will eventually produce excellent results. I am anxious to give practical assistance to the movement, and it occurs to me that the establishment of branches of the Association on the Continent—in Belgium, France, Germany, &c.—would considerably extend the Association's sphere of usefulness.

It is undoubtedly valuable for a gardener to know several languages; the necessity is not, of course, so great for the home-dwelling Britishers, whose only frontier is the ocean, but assuredly the knowledge is a most valuable asset.

Many gardeners, both English and foreign, would be glad to send their sons abroad for a few years could they obtain a guarantee of kind treatment, and that a good knowledge of foreign languages and methods would be obtained. If there were a branch of the British Gardeners' Association in every country where there is much gardening done, it would, I am sure, greatly facilitate the acquirement of an international training, and would, moreover, greatly tend to strengthen that international good-feeling which already so happily characterises gardening.

For my part, I would be willing to do my utmost to start a branch in Belgium. It would be a pleasure to me to be of service to my numerous British friends. Finally, I believe the creation of branches of the existent British Gardeners' Association to be the most practical step possible towards the ultimate establishment of the International Gardeners' Association advocated by Mr. Leonard Barron. *Louis Gentil, Curator Botanic Gardens, Brussels.* [Mr. Gentil recently published a pamphlet, entitled *Les Groupement des Jardiniers Anglais*, in which the aims and objects of the British Gardeners' Association were fully explained in the French language. Ed.]

BOOK NOTICE.

FOREST TERMINOLOGY.

WE ought in all strictness to cite the threefold title of this little book, for it is addressed to French and to German foresters as well as to British practitioners. It is, in fact, a dictionary of the terms used in forestry in the three principal languages of Europe. Thus, the first entry in the French section is "Abatage, m.," which is rendered in English as "Felling or Cutting," and in German as "Fallung, Hauung, f., Abhiebs, m.," so that to express the same operation six separate words are made use of, and some of these are masculine, some feminine! Of course we must take things as we find them, make the best of them, and by no means impute blame to the author of this little book for a matter for which he is not in the least degree responsible. We allude to the matter because now that forestry is being studied on scientific principles, it may be well to adopt as far as possible a precise and uniform scientific nomenclature, as is done more or less completely in botany and other sciences. Linnæus and the two De Candelles did much to secure that the same idea should be expressed by the same word, but it is very hard to induce others to follow their good example. The Latin word "casus" would stand for "felling," very well, and would be understood by French and German as well as by English foresters. The English word "canopy," which originally meant a mosquito-net, is rendered in French by *voute foliacée*, and in German by *Laubdach* and *Kronendach*. Perhaps the Latin "corona" might be used internationally for this purpose. Why, again, should *Zwitter-blüte* be used to signify an hermaphrodite flower, the latter term equally well understood in France and in Britain?

Whilst awaiting the millennial period, when a definite international nomenclature shall be adopted for things in common use by all nations, we may heartily welcome this useful little book, the utility of which will be experienced so long as the Germans call *Himmelschlüssel* what we know as Primrose. The book is evidently carefully compiled by the author, Prof. J. Gerschel. It is well printed, and may be had from MM. Berger-Levrault et Cie, 5, Rue des Beaux Arts, Paris; or from Messrs. Williams & Norgate, London.

A NEWLY-FORMED ROCK GARDEN.

THE illustration at fig. 179 represents a rock-garden which has been made on the site of a dis-used stone quarry, which afterwards became a mere rubbish-tip. As surface soil is not essential in the formation of a rockery, because the material employed in construction is generally introduced to the site, such a position, where the land is very undulating and possesses but little natural beauty, forms an ideal one for the purpose. In carrying out the transformation, pockets were formed with stone, and these were filled with suitable soil, but where the gradient was too steep a retaining wall was built with stone and leaf-mould.

HARDY PLANTS AT WESTWICK HALL.

IN the Eastern counties wherever hardy plants are known, and especially at the shows of the Norwich Horticultural Society, the name of Davison as an exhibitor of these plants is a household word. There are few men who can stage, as Mr. Davison has done, forty-eight distinct varieties from a private garden good enough to beat those of some of our leading nurserymen. Mr. Davison is well known as the raiser of the finest of all *Montbretias*, *G. Davison*, of which he has an immense stock. This is a very fine variety, the deep yellow colour is glowing, and the growth vigorous. As a result of careful

colour is assured. This is undoubtedly the best way to grow hardy plants where sufficient space can be given. The soil is a sandy loam—just the kind that most subjects revel in. Never have I seen *Tropæolum speciosum* growing more luxuriantly than at Westwick. At the foot of a west wall some roots were put in last March and so vigorous has been the growth that the wall, 11 feet high and 20 feet long, is thickly covered with growth, and in September was laden with its crimson blossoms. A capital method of training the plants is that of suspending from the top of the wall ordinary fish-netting; to this the growth clings, and is easily removed at the end of the season.

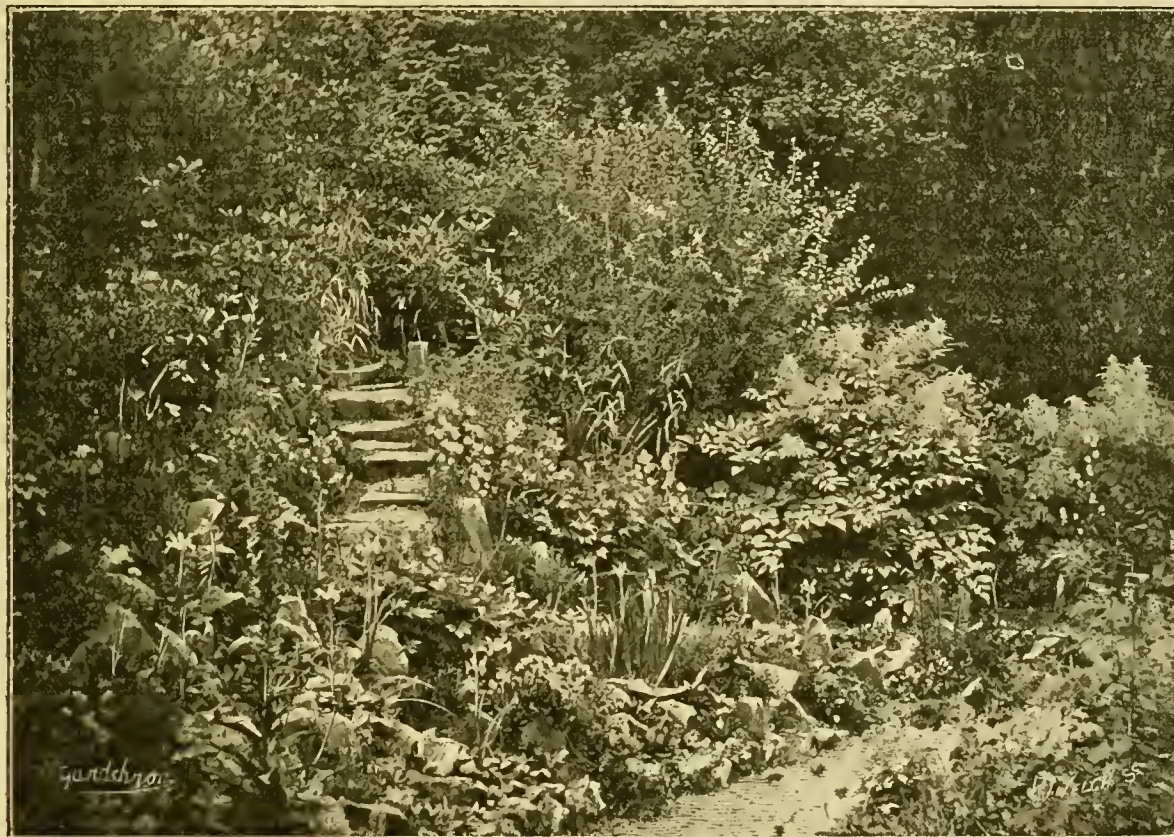


FIG. 179.—A RUBBISH-BANK TRANSFORMED INTO A ROCK GARDEN AS IT APPEARED IN THE FIRST SEASON AFTER PLANTING.

The ground slopes to the north-west, and is well adapted for the culture of moisture and shade-loving plants, consequently the various species of *Primula*—as *P. rosea*, *P. denticulata*, *P. farinosa*, *P. japonica*, *P. marginata*, and *P. Sieboldi*—have been planted numerous; also *Spiraea Aruncus*, *S. palmata*, and *S. p. alba*, which grow luxuriantly; while the mossy *Saxifragas* are fast forming a green carpet over the stone steps. Other plants that are succeeding well in the position are *Campanulas*, *Trollius*, *Ramondias*, *Epimediums*, *Cypripediums*, *Wulfenias*, and various bulbs, amongst which are Spanish Irises, which were flowering when the photograph was taken. The rock-garden is at Stretton House, Alfreton, the residence of W. H. McConnel, Esq., to whose gardener (Mr. Geo. Wassell) we are indebted for the photograph.

"HONOUR TO HORTICULTURE."—We are told that a practitioner of the art has just been named Officer of the Nicham Iffikar. We hope horticulture appreciates the honour conferred on it.

hybridisation, Mr. Davison has succeeded in raising another variety possessing even more merit than that named after himself. It is the result of a cross from George Davison and some seedlings raised from Germania. I saw it when in flower, and the blooms measured 3 inches in diameter, the individual petals being $\frac{3}{4}$ inch across, and the colour a combination of the two varieties named, yet intensified, and with plum-coloured markings around the eye.

Mr. Davison has a suitable soil for the cultivation of herbaceous plants, and a great variety of sites at command. There is no set plan or border, but a series of borders and patches with varying aspects. For instance, a border facing east is 20 feet wide, having an evergreen hedge at the back. In other sites, borders not more than a yard in width are filled with desirable species. The question of how to grow best the various plants is studied, rather than how to produce a good effect in the garden. The planting is done in masses of one variety, so that when the flowering-time of each arrives a mass of

Heucheras in variety simply revel here; so numerous are they and so profuse in flowering that several large Rose-beds are thickly planted with *H. sanguinea*; and well do they hide the soil, and give abundance of flowers in their season. Mr. Davison pulls the roots to pieces in July, and dibbles in every piece, whether it has roots or not.

Two beds of *Gentiana acaulis*, 8 feet by 3 feet, would startle those who fail to grow this plant successfully. Mr. Davison told me the plants have occupied their present position for seventy years. Once in four years the plants are taken up, divided and replanted. *Gentiana verna* is generally considered somewhat a "miffy" subject. Here a patch 3 feet square, put out only last March in sandy peat and lime-rubble made quite firm, is growing at the foot of a high west wall. The surface is covered with clean pebbles, and certainly its present appearance denotes absolute success. *Lilium giganteum* grows freely, one spike with huge seed-pods on it was 8 feet high and as much as 4 inches in diameter.

Bocconia microcarpa in a patch 10 feet in diameter was very effective with its red-tinted seed-pods.

Tritomas luxuriante, such varieties as *T. nobilis*, *phœnix*, *glaucescens*, and a favourite here, *T. Nelsoni*, were noticeable in August. *T. Nelsoni* is a desirable late-flowering variety but 2 feet high. *Galax aphylla* at the foot of a west wall was simply romping away, although but recently planted out.

Hemerocallis in variety are grown to perfection. Masses of such kinds as *Dr. Regel* are to be found. *H. aurantiaca major* does not flower here nearly so freely as the type. *Eremurus*, *Trilliums*, *Iris*, and the like cannot fail to make a brave show here in their season, considering the attention that is given them and the soil in which they grow. *Rudbeckia gigantea*, with its 7-foot stems, rich yellow flowers 6 inches in diameter and deep glaucous leaves, is a fine sight in September when grown in a mass, as here. This I look upon as one of the best of the "cone flowers." *Phloxes* are much appreciated, and many desirable varieties have been raised. One variety *Mr. Davison* showed me was even better than *Miss Pemberton*, which is taking a high standard of quality. An hour's conversation with *Mr. Davison* is of much benefit to lovers of hardy plants, as he is so communicative of his vast store of knowledge. From his employer, *Major Peter*, he receives every encouragement, as he too is devoted to this phase of his garden. *E. Molyneux*.

POTATOS.

PROPAGATING NORTHERN STAR.—I was very much interested in the article by "R. H. P." in the *Gardeners' Chronicle*, October 3, 1903, p. 234, showing in how many ways Potatoes might be propagated. I was tempted to try my luck, and I therefore bought 3 lb. of tubers in February from Messrs. Ker & Co., Liverpool. I put them into a box and placed them in a heated atmosphere. As soon as growths appeared we took them and made cuttings of them. We planted them out on May 19 on well-prepared ground and lifted the tubers on October 27. The total weight was 14 cwt. 71 lb.; one of the tubers weighed 1 lb. 9 oz., and many of them were more than a pound in weight. *J. Voss, Kedleston Hall Gardens, Derby*.

NORTHERN STAR.

I have lifted 252 lb. of tubers from 1 lb. of Northern Star seed tubers I purchased in March with Evergood and Sir J. Llewelyn. I am sorry to say that Evergood was no good with me, but Sir John Llewelyn proved to be the best I have ever grown; the tubers were even in size and had no disease. Northern Star was very much diseased, and super-tuberation started early in the first batch I planted out at the end of April. The second batch, which had not so much second growth when lifted, was planted about May 20. The third lot was planted out on June 13, and had no second growth at all. I do not think Northern Star will ever become a favourite in the garden; it is more suited for field culture. *J. Wright, The Gardens, Brightleigh, Redhill, Surrey*.

NEW VARIETIES.

We hear much as to the merits and demerits of the new varieties of Potatoes, the general feeling being that if a certain variety has not succeeded it ought to be thrown out; or if it has been successful, then it should be kept in the list of good things. There is perhaps something to be said in favour of certain varieties which may have been utterly bad in a particular place. For instance your correspondent, the Rev. G. H. Engleheart, in a recent issue stated that "Northern Star is tasteless, not disease-resisting, and difficult to grow." We have found it in our

moist climate here a good grower, and second only to the old Champion in flavour, but not free from disease. I have, however, sufficient faith in its doing well next year to induce me to plant a considerable quantity. Evergood, King Edward VII., Royal Kidney, and Empress Queen, all proved heavy croppers, but none was good in flavour. I will try their cooking qualities in the spring; they may then prove better, as is the case with several varieties, as Up-to-Date and Maincrop. Sir John Llewelyn, as an early Potato, proved my best cropper, cooked well, and in reality was finer flavoured than Puritan, British Premier, or Beauty of Hebron. This note I trust may not be taken as denouncing any particular Potato, but to show that what may be bad in one locality or soil may be really good in another. *Andrew Pearson, Lota Lodge, Glanmire, Co. Cork*.

THE VARIETY, SIR JOHN LLEWELYN.

I am surprised to find that this Potato, after having passed successfully through most of the Potato trials of the last four years, should be now attacked in the way it is. Your correspondent "Experience" (or rather I should say the proper term is "inexperience") says it is a discarded International (or rumour says so). But I discarded International fifteen years ago, when I saved $\frac{1}{2}$ cwt. out of 2 tons, disease having destroyed the others. Now, Sir John Llewelyn is the best disease-resister of all the early Potatoes. This year we did not get 2 cwt. of diseased tubers out of a crop of 5 acres, and although lifted in the first and second weeks in August the tubers are keeping quite as sound as the best late varieties, whereas most of the other early kinds are half-rotten with disease. As the proof of the pudding is in the eating, I have taken the liberty of sending you some tubers that you may test its cooking qualities.

Most of the Potatoes grown in this neighbourhood are "soapy" this year, but those of Sir John Llewelyn are the best I have tasted. In all probability [your] correspondent or his friends have some of the substitutes that were put on the market for Sir John Llewelyn; Ninetyfold is freely spoken of as one of these. With regard to the tasting of Potatoes by the Royal Horticultural Society, I remember Mr. Wright stating in a letter that they had tasted my Potato so many times that he had not got a presentable dish left for the exhibition table.

I enclose a report of experiments with varieties of Potatoes from the Midland Agricultural and Dairy Institute, in which it is stated that Sir John Llewelyn yielded a crop very nearly double that of Ninetyfold, and that the tubers were of good flavour and fair texture. Ninetyfold is described as "wet," and inclined to be "soapy." *James Harris, Nurseries, Blackpill, near Swansea*.

COLONIAL NOTES.

NEW SOUTH WALES.

THE following notes are extracted from a private letter:—

The situation of the experimental farm is 500 feet above sea-level, north of Sydney, and nearly tropical. The temperature gets as high as 115° in the shade. The soil is of volcanic origin, extending to the depth of 25 feet. The average rainfall is 84 inches. I can fancy you coming over my Pineapple area, which is 2 acres, and breaking off a beautiful ripe Queen, which you can smell yards away, and when you peel them the juice runs between your fingers. Another beautiful fruit is the Passion fruit, *Passiflora edulis*, that you can go into the forests and hedges and gather by the sackful. The Cape Gooseberry, *Physalis edulis*, grows everywhere along the roadside and through the fields. The Tamarind, *Diploglottis Cunninghamii*, is a native tree and grows very tall, and looks superb

with its large broad leaves overhanging the smaller trees. This place is devoted entirely to the purpose of training the farmers' or citizens' sons, also for distributing any class of plant that will be profitable for the farmer to grow; and of those which are not, records are taken and the plants destroyed. My position is one full of interest, especially when showing the visitors round and explaining the different trees, methods, &c.

The Peach-trees are just blooming, and all the buds of the other trees are swelling very fast. September will be a very gay time. What a vast difference between the two countries! We have not the flora I had at Randwick, but here is the large Ironbark, Wollybut, Tallowood, Red Cedar, Mahogany, and all the best timbers that are being exported for railway sleepers and street pavements. *F. C. K.*

JOHANNESBURG.

It will be interesting to your readers to learn that Johannesburg, Transvaal, is now taking a deep interest in horticultural and arboricultural matters. Previous to the late war, the Town Council really concentrated all their energies on one park. This is called the Joubert Park, and is situated almost in the heart of this great and growing city. There are several smaller ones situated in various parts of the town, which may be mentioned—End Park, Jeppes Park, Oval Park, &c.—all of which were planted with *Eucalyptus globulus* and *Acacia decurrens*, and presented until lately a dilapidated appearance. Since the cessation of hostilities the Council have acquired two of the largest parks in the whole of South Africa; these are named Milner Park and Hermann Eckstein Park. The former is something like 280 acres in extent, and the latter falls short of this extent by about 40 acres.

The Council, comprehending the magnitude of the work that had to be carried out, naturally realised the necessity of obtaining a qualified man to instruct the Council on all important matters, advertised for an experienced horticulturist with a thorough knowledge of botany and landscape work. In reply they received no fewer than 160 applications, and after considerable discussion the Council appointed Mr. Alex. H. Stirrat as Superintendent of Parks. It will no doubt be interesting to readers of the *Gardeners' Chronicle* to note that Mr. Stirrat is a young man, being only 28 years of age, a Scotsman by birth. At the age of 13 he was apprenticed in the gardens of Wallside, N.B., and thus graduated at the spade under his father, Mr. E. Stirrat, who was then head gardener at that place. Remaining there for a period of nine years, he afterwards went to the Royal Botanic Gardens, Glasgow, passing through the principal departments of these gardens, gaining at that time the First-class Certificates of the Royal Horticultural Society for Horticulture and Botany, also from the Glasgow Technical College for similar subjects. After leaving these gardens, Mr. Stirrat was engaged by the firm of Messrs. Stirrat, Bros., nurserymen and seedsmen, Falkirk, N.B., where he had practically the full charge of the landscape work of that firm. He remained there for two years, and then emigrated to South Africa, finding that country in a state of confusion at that time. Mr. Stirrat also graduated as a sanitary engineer, having obtained the certificates of the Sanitary Institute, London, and he is an Associate of the Institute of Sanitary Engineers, London. He obtained prominent positions in Cape Town, Mossel Bay, Boksburg, &c. During this period he was gaining a thorough knowledge of the various plants indigenous to that part of the world. He also contributed largely to the Cape papers on matters pertaining to horticulture, and endeavoured to create an interest in gardening circles.

It is pleasing to note that since commencing his duties as Superintendent of Parks, he again

saw the necessity of urging on his brother gardeners, and wrote in similar terms to the *Transvaal Leader*, advocating the establishment of a horticultural society in the town. Six days after his letter appeared a society was formed which promises to be the nucleus of horticulture in the Transvaal.

Mr. Stirrat is to be congratulated on his appointment to such a responsible position, but in such a man the Council will find the required energy and ability for the large undertaking to be shortly carried out. Mr. Stirrat has the superintendence of all parks, squares, cemeteries, and trees in streets, and is general adviser to the Council on all matters relating to horticulture. *F. C.*, September 17.

THE BOTANIC STATION, GRENADA.

The Reports on the Botanic Station and Experiment Plots, Grenada, to September 27, 1904, are favourable. No new works of any special importance were undertaken, but interesting experiments were carried out in plots attached to the gardens. Trials with varieties of Sweet Potatoes and Yams should prove useful in indicating the varieties best suited to local conditions.

NOTES ON THE GENUS ALOE.

In his *Synopsis of Aloineæ and Yuccoideæ*, Mr. J. G. Baker gives the history of Aloes. According to him, *Aloe vera*, *Linnaeus*, or *vulgaris*, *Lamarck*, is the oldest species known, as it belongs to the Southern Mediterranean region and the Canarian Islands. In the year 1703, *Commelinus* described and figured in his *Præcludia* a certain number of Cape Aloes, and a few others in the *Hortus Amstelodamensis*. *Linnaeus* merged most of the species then known into a conglomerate under the name of *Aloe perfoliata*. *Philip Miller* knew them better, and enumerated twenty-two species in the sixth edition of his *Gardeners' Dictionary*. *Lamarck*, and later on *Willdenow*, had very little to add. *Thunberg*, the author of the first *Flora Capensis*, seems to have paid little attention to them. But between 1790 and 1800 many new species were introduced through *F. Masson*, who was collecting plants in South Africa at that time.

At home, in the meantime, *Haworth* had taken up the study of succulent plants, which had just begun to be general favourites. He published a monograph of the Aloes in vol. vii. (1804) of the *Transactions of the Linnean Society*. In 1812 appeared his *Synopsis Plantarum Succulentarum*, which was followed in 1819 by a *Supplementum*, and in 1821 by his *Revisiones*. *Duval*, a French botanist, separated *Gasterias* and *Haworthias* from the true Aloes. *Willdenow* created the genera *Apicra* and *Rhipidodendron*. *Haworth* accepted these new genera in his *Revisiones*, and added another, *Pachydendron*. Between 1820 and 1830 many new Aloes were introduced through *Bowie*, and described by *Haworth* in *Taylor's Philosophical Magazine*.

On the Continent *Prince Salm-Dyck* published a large monograph of Aloes with beautifully illustrated plates, which continues to be of great service nowadays. He was the first who undertook to group the single species according to their relationships; but he considered the formerly-established genera *Apicra*, *Haworthia*, and *Gasteria* as sections only.

Towards the middle of the nineteenth century little was done concerning these plants. *Kunth's Enumeratio* adds nothing new. The introduction of other species is due to Mr. *Wilson Saunders*, an enthusiastic amateur who sent out Mr. *Thomas Cooper* to South Africa. Thanks to him and his great energy a great number of new species came to England between 1858 and 1862. These were studied by Mr. *Baker* and partly figured in the *Botanical Magazine*. A

few species also were then introduced through seeds by *Schimper*, the famous collector in Abyssinia. Several of these were figured and described by *Todaro* in his *Hortus Ponormitanus*.

Since then the whole of Africa has become better explored, and new Aloes have often been brought home by various travellers, but chiefly herbarium specimens.

Forskal, a Swedish botanist, discovered in 1775 several Aloes in South Arabia, which for

along the east coast as far as Upper Egypt and Arabia, and on the west side as far as Togoland.

Most of these Aloes are, however, very imperfectly known, as the herbarium specimens are in most cases very poor, and so consequently must be the descriptions taken from them.

Mr. J. G. Baker, who worked up the genus in the *Journal Linnean Society* and in the two African Floras, divides it into four sub-genera. "Eualoe," the first one, comprises the bulk of



FIG. 180.—ALOE STRIATA: SEE GROUP V. IN "NOTES ON THE GENUS ALOE."

over 100 years remained very imperfectly known. Many of these were rediscovered and brought home alive by *G. Schweinfurth* in 1889.

Tropical Africa has now proved to be richer in Aloes than at first it seemed to be, and there may be many a mountain chain never visited by an explorer where other new Aloes may be found.

Aloes and *Lomatophyllums*, a genus very near to them, have also been discovered in the East African Islands. There are several Aloes known from Madagascar, Mauritius, and Socotra. So far as we know, the genus *Aloe* and its allies cover the mountainous and arid regions from the Cape

the species; "Gonialoe" and "Kumara," one each; and "Pachydendron," five species.

A long and careful study of a large quantity of species flowering annually in the gardens of La Mortola has, however, shown me that there are really no characters of sufficient importance to keep up these four sub-genera, and that other species must rank as high as those raised into sub-genera.

Looking over the whole genus, we can clearly discern a certain number of groups wherein the species form most natural groups. In defining these groups, the form of the in-

florescence, the form and length of bracts and pedicels, the structure of the perianth, together with the whole habit of the plants, must be considered. There are over twenty of such groups, which, however, are not of equal value; some might well rank as sub-genera, others are mere series. A botanical account of them will soon follow in Engler's *Botanischen Jahrbüchern*.

It is impossible here to enter further into the details upon which these groups have been established, and therefore I prefer to give here a short analytical synopsis.

A. SMALL ACAULESCENT PLANTS, peduncle simple, bracts acute.

Peduncle much bracteate, perianth straight, not constricted.

Leaves thin, linear, canaliculate, bordered with a small cartilaginous line and minute teeth:

I.—MICRACANTHÆ.

Ex.: Aloe Cooperi (*Botanical Magazine*, t. 6377), A. micracantha, Buchanan, &c., not uncommon in gardens, form with nine other species this group. South and tropical Africa.

Leaves succulent, shorter, deltoideo-lanceolate, dentate.

II.—HUMILES.

Ex.: A. humilis, brevifolia, pratensis (*Botanical Magazine*, t. 6705), &c. South Africa.

Peduncle less bracteate, perianth above the ovary more or less constricted.

Leaves short, very numerous, in a dense rosette, tubercled, and ending in a long cusp. Pedicels long.

III.—ARISTATÆ.

Ex.: A. aristata. South Africa.

Leaves trifurcately arranged, smooth, with thick epidermis. Pedicels short.

IV.—SERRULATE (*Gonialoe*, Baker).

Ex.: A. variegata (*Botanical Magazine*, 513) and A. serrulata (*Botanical Magazine*, 1415). There are no characters important enough to raise A. variegata into a proper sub-genus. South Africa.

B. LARGER PLANTS, subcaulescent to truly caulescent, with the leaves densely rosulate. Peduncles dichotomously branched, naked below, bracteate above; bracts ovate-lanceolate, acute. Outer segments of the perianth more or less connate; the inner free on their margins to the base.

Perianth rounded at the base.

Smaller plants, stemless or with short stems only, leaves very often maculate; perianth very often constricted above the ovary.

V.—SAPONARIÆ.

A great many species cultivated in gardens belong to this group, as A. saponaria, latifolia, Greenii, &c. The most beautiful is certainly the old A. striata, Haworth (fig. 180), commonly known in gardens as A. Hanburyana; A. Baumii (see *Botanical Magazine*, p. 7948), and A. pallidiflora are new introductions. South Africa, South-west Africa, East Africa, to Abyssinia.

Larger plants, with a stem when old; leaves large, ensiform. Perianth not constricted.

Alwin Berger, La Mortola, Ventimiglia, Italy.

(To be continued.)

LEGACY FOR A GARDENER—It is reported that the late Mr. JAS. THOMAS SMITH, of Fairby House, Lee, Kent, amongst legacies to servants, bequeathed to his gardener, Mr. JNO. HOWE, a sum of £700.

The Week's Work.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Chrysanthemums.—The propagation of these may now be taken in hand. Where a considerable number of plants has to be propagated, a shallow frame may be placed on the side stage of a house where an atmospheric temperature of about 50° is maintained. The cuttings having been inserted in small pots, the soil should be given a watering and the pots then stood on ashes in the frame. It is advisable that no more cuttings be taken at a time than can be inserted and placed in the frame before they "flag." In order to prevent the cuttings from "damping-off," the light should be removed for an hour early each morning to allow the condensed moisture to escape, at the same time wiping the inside of the glass. If notwithstanding all precautions damping should occur, let the decayed portions of the foliage be cut away with a sharp pair of scissors and keep the atmosphere of the frame somewhat drier. Where a small number of plants is required, a handlight, or a shallow box covered with sheets of glass may be used in place of a frame.

Arum Lilies (*Richardia africana*).—Where these are required for Easter decorations the plants must be placed in a structure where fire-heat is only used to keep the temperature a few degrees above freezing point, otherwise, the coming Easter being late, the plants would flower too soon. For ordinary purposes a temperature of about 55° will be a suitable one, but if it be necessary to hasten the flowering of the plants, any that are showing their flowers may be placed in a higher temperature.

Retarded Liliiums.—These flower well in a temperature of 60°, but the flowering may be hastened with safety if, when the flower-buds are an inch or more in length, the plants be placed in the Cucumber-house. This remark is intended to apply to the different varieties of L. speciosum and to L. longiflorum. No attempt should be made to place Liliiums in a high temperature before the flower-buds are well advanced.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor LAWRENCE, Bart., Burford, Dorking.

Lesser-known species.—The deciduous Calanthes, numerous species of Cypripedium and their hybrids, and a few Cattleyas and Lælio-Cattleyas are amongst the most prominent Orchids now in flower in most collections. The following species which are also in flower are not given so much attention generally as their merits deserve. They represent an extremely interesting class of plants; many of them produce pretty and singular-looking flowers, and some of them deserve a place in every collection of Orchids. Gomezia Barkeri, Dendrobium amplum, D. Cologyne, D. strongilanthum, D. Wattianum, Zygopetalum Murryanum, Warscewiczella marginata, Ione bicolor, I. grandiflora, Walnewa pulchella, Epidendrum equitans, E. umbellatum, E. Ellisii, E. radiatum fucatum, E. fragrans, Gongora charontes, Maxillaria punctata, Oncidium pumilum, O. cristatum, Cologyne barbata, Compactia macrolepton, Platyclinis uncatia, P. Cobbiana, Octomeria grandiflora, Masdevallia trinema, M. trigloch, and many others. Owing to the short space at my disposal it is impossible to give separate cultural directions for each species enumerated in this long list, but no grower will go far wrong if he places the whole of them in a cool Cattleya or intermediate-house temperature, potting them in the ordinary compost employed for Orchids. The only exceptions are Dendrobium amplum and D. Cologyne; these rare species prefer to be fastened upon flat teak rafts, and suspended close up to the roof of the house. The plants of deciduous Catasetsums, Mormodes, Cychnoches, Chysis, Cyrtopodiums, and Enlophas, whose new pseudo-bulbs are nearly at their full size, should be removed to a greenhouse having a cool, dry atmosphere, where they may obtain every ray of sunshine. Afford these plants plenty of water at the roots each time they are dry,

and when the leaves commence to become yellow and fall off the supply should be gradually diminished until it is discontinued altogether. In order to flower these plants satisfactorily they should be afforded a long period of rest, and if properly matured the pseudo-bulbs will keep fresh-looking and plump all through the resting season without having need for any water. The Chinese Spathoglottis Fortunei will also require to be kept cool and dry during the resting period.

Odontoglossums.—O. citrosum, though not a deciduous species, should be given similar treatment while at rest. Being kept dry at the root during the resting period, the pseudo-bulbs will shrivel a good deal; but there is nothing to fear, as they will soon plump up to their normal condition if kept wet for a few days when the flower-spikes appear at the apex of the new growths. O. grande, O. Reichenheimii, and O. læve, having finished their growth, will need less water during winter. The plants should be placed in a cool, dry position in the intermediate-house. Plants of O. Inslyii and its variety splendens that are sending up their flower-spikes should be kept just moist at the root until the flowers fade, after which time they should receive the same treatment as O. grande, &c.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippingham.

Mushrooms are now plentiful if previous directions have been followed. Make up new beds for succession, and bear in mind that if there is a considerable circulation of air in the structure, the beds, if not covered up well, will soon become dry, and applications of water will be necessary oftener than would be the case in a house where the atmosphere can be kept moist but sweet. Before applying water uncover the beds, and if they are found to be very dry afford sufficient water to moisten the whole of the bed, but not to saturate it. This point should be noted by beginners, for by avoiding the extremes of moisture and drought, and at the same time by maintaining a properly balanced moist atmosphere, the highest success will be obtained. If the beds are covered with hay or straw some means should be used to keep it from the surface of the bed, because, should it be left flat, the spawn will run through it. Wood frames with wire-netting fastened over them to keep the covering about 4 inches above the surface of the bed are very useful.

Celery.—Although there has been only 12° of frost registered here, Celery has been injured, which is probably due to the previous mild weather, and to the fact that the Celery is grown in a position in the garden which is much shaded by trees. It will now be necessary to protect the plants as much as possible from hard frost or heavy rains that may yet occur.

Leeks have bolted more this season with us than is usual, and I am not quite satisfied what has caused this, the seed having been sown about the same time as in previous years, and the plants received no check, for the weather was altogether favourable. Those plants which have bolted had better be pulled up, as they are not satisfactory for cooking purposes.

Cabbages that were planted during September should be well established now. When there is a favourable opportunity, hoe over the surface of the ground to prevent slugs gaining a footing. If any plants have already been destroyed by slugs, let such blanks be made good from the reserve.

Horse-radish.—Have sufficient roots taken up and laid in damp sand or soil for use when the ground is frozen. The making of new beds may now be carried out with great advantage, there being less pressure of work than will be the case in February and March.

General work.—When the ground is frost-bound let manure be wheeled on to the ground. This work should be commenced in the morning before the sun has thawed the surface of the walks and made them sticky. In wet weather labels may be made, painted, and names written or printed upon them. Where large wood labels

are used tar the lower ends to an inch or two above the ground line. Seed that has been gathered during the season should be cleaned and the seed-drawers examined, so as to be in a position to compile the list of seeds that will be required for the coming year.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Pears.—Pear-trees having shed their foliage may now be pruned, and have their branches regulated. Pears are usually planted against west walls, and in such a position if good treatment is applied, and care taken to supply the roots with sufficient food, and to thin out the fruits in seasons when this is necessary, very fine specimens can be obtained. Never allow the main tiers to become a thicket of long snags. If the trees have been much neglected and such snags are numerous, there are two ways in which the branches may be refurnished with healthier buds and wood, first, by removing several of these useless pieces annually until the branches have been renewed with short buds, and secondly by gradually removing the branches altogether, securing and training young wood in their stead. I have seen old trees brought into a very satisfactory state of bearing by the removal of all the old snags along the bottom pair of branches and those of a pair halfway up the wall, and then training young shoots at 12 to 14 inches apart upright, cutting away other branches as room was required for the development of the young wood. When pruning Pear-trees, extra care is necessary with some varieties: Jargonelle, for instance, must not be pruned very severely, some of the fruit-buds being produced on branches several inches long. Young trees should have their leaders shortened back to where the next pair of branches is wanted, leaving one bud to make the leader in the following year, and one on either side to form the branches. This should be repeated yearly until the tree has made its last pair. Occasionally Pear-trees are trained in the shape of a fan, and make fruitful trees. In whatever fashion the trees are trained, the branches should be 12 or 14 inches apart, or sufficiently to allow a clear space of wall to be visible between them when in leaf. The young growths each year may be cut back to from 12 to 14 inches, always cutting to just above a bud pointing in the direction it is required the next growth should take.

Cordons.—Pear trees trained as horizontal cordons have a good effect and fruit freely by the side of foot paths, if lifted occasionally and treated suitably. Such cordons should have a clear stem of 20 inches. Apples may be grown in the same way, and if suitable varieties be planted, some capital fruits may be gathered. Apples often do better than Pears on such cordons, as the fruits, being borne on the top, get plenty of sun. The annual pruning necessary consists merely in shortening to a couple of buds the summer growths which were pinched in July or August.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Early Vines in Pots.—Where fermenting materials are used for the plunging of the pots as advised in a previous calendar, frequent attention will be necessary in order to keep the material well up to the pots, and the bottom heat from falling below 70°. As the buds are now swelling the temperature should be gradually increased so that when they are opening into leaf the temperature may be from 60° to 65°, with a rise of 10° or 15° during the day, and unless the glass is glazed exceptionally close, sufficient air will be admitted without opening the ventilators. At this season 10° or 15° rise by sun-heat is very beneficial, but cold air is injurious. Having fermenting materials in the house, frequent dampings or syringings will not be so necessary. Keep the glass clean in order to admit as much light as possible, and let the evaporating troughs be kept filled with liquid-manure.

Liquid-manure may also be supplied occasionally to the roots of the plants at a temperature equal to the bottom-heat.

Early Vines in Borders.—If these Vines have been forced very early for a few years they have had a long rest this season, and if the house was closed early in November as advised, the buds of the Vines will now be swelling freely. During the day the temperature should be gradually increased by artificial means up to 65°, which should not be exceeded unless by sun-heat. In the case of very early Vines, it is necessary in order to promote root-action that the work of disbudding and stopping should not be followed up too closely. Guard against excess of moisture at the roots and in the atmosphere as tending to promote weak growth. Where there are interior and exterior borders, and the latter are covered with freshly gathered leaves as a protection from heavy rains and snow, it will be well to uncover them upon fine, warm days, as over-covering of well-drained borders will cause more injury than free exposure. Neither frost nor moisture will injure the roots if the soil be firm and well drained. From houses having borders inside and out I have repeatedly cut ripe Grapes in April, yet have used no protection other than that of a fresh supply of lightly-prepared droppings from the stables, which were frequently moved with a rake.

Ripe Grapes.—If there are Grapes still hanging, the outside borders must be afforded protection. Maintain a dry atmosphere in the house, and admit air on dry days, employing a little fire-heat. Similar conditions are necessary for fruit that is cut with wood attached and placed in bottles of water in the fruit-room.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Rockery.—If new ground is to be added to the rockery, and trees have been cut down, grub out all the roots and stumps, as these would rot and put the rocks out of position, as well as provide a harbour for vermin. Drainage should be constructed in such a manner that the water will not "wash" the lower plants. Provide "pockets" for plants, and arrange for the water to pass away from them without causing damage to other plants. Rough stones or large boulders may be used, placing them in the best manner to suit the varieties of plants for which they are intended. Let the paths be winding and irregular; flat, rough stones may be used upon these and the crevices between them planted with Sedums and Saxifragas. A selection of plants for planting under the trees surrounding the garden, where more tender sorts will not thrive, may include Heaths, Berberis buxifolia and Cotoneaster horizontalis, C. frigidula, St. John's Wort, Box, and any small-leaved shrubs. Hollies, Bamboos, Pampas Grass in single clumps, may also be used. Skimmia japonica is full of berries now, and appears very bright. Other small-growing shrubs or flowering plants suitable for the rockery are Spanish gorse (Genista hispanica pumila), Yucca flaccida, Cistus florentinus, Rhododendrons ferrugineum and maximum, Meconopsis cambrica, seedlings of which have appeared round the parent plant here; Primula maculata, growing under the rock, will require a little water as the plants are just on the move and are very dry. In cleaning the rockery be careful to keep the labels in their proper positions. The work of planting will be best left until the spring.

Drains and Walls.—Paths on steep slopes will require much attention, as heavy rains will wash them badly and fill up the pipes. Such paths if narrow should not be made very high in the centre, as the gravel will be washed to the sides and the roller is of little use. One remedy for this is to dig out a channel on each side of the path about 9 inches wide or the width of the top of the grating, fill in with some rough material to within 3 inches of the top, then adding good concrete, covering the whole with gravel. The centre of the walk, as just mentioned, must be

kept nearly level with the concrete. This may be carried out on a larger road, where flints are used with better success. The best binding gravel obtainable should be used for paths on slopes.

THE APIARY.

By EXPERT.

Removing Bees.—When removing bar-framed hives, the entrance should be closed to 1½ inch or less, and a piece of perforated zinc tacked over with tin-tacks; this will enable the bees to get in. The entrance slides should be fastened with small screws to prevent them slipping, and the floor board fastened with 1½-inch screws into the side of the outer case, two screws at least being used in each side; the risers and covers should also be screwed in the same way, and a stout cord fastened securely over the hive, running from back to front and from side to side. If this is carefully done the whole will travel any distance and under any circumstances without any fear of a mishap. Should any stocks of bees be placed on the railway not properly secured, and any injury arise through the bees escaping, the railway company may fall back on the sender for damages. A simple plan to secure the inside or body-box is to have two pieces of wood the length of the inner chamber about 1 inch thick and 3 inches wide; lay this on the frames above the covering and secure with screws at the front and back.

Price of Sugar.—The bee-keeper will find his candy-cake cost much more than usual. I would advise the keeping of the honey and sections, and unless he can secure a good price he will find to let the bees have either for extra stores will come much cheaper than buying sugar at the present high price. In placing in candy-cake, do not disturb the bees any more than is possible. The cases should be placed over the centre of the brood chamber, as the bees will all be clustered there for warmth, and if the food is placed at the extreme front or back, it will give them unnecessary trouble to get it. In feeding skeps, cut out a round hole from the top and place a cake or block of candy on, being particular about covering the same well down and placing a tin or a weight of some sort on to keep mice from getting to it, or eventually they will get into the skep itself and so destroy the colony. An extra wrapper should be given to each stock when the covering is insufficient. In an exposed place close the entrance nearly up.

Wax that is not saleable through being very dark in colour can be placed to the bee-keeper's credit by sending it to one of the many bee-appliance dealers to be made up into foundations for use next season, or by coming to terms to have goods which the apiarist will require later on.

Buying stock.—A word of warning as to buying stocks will perhaps be useful to those who have commenced bee-keeping and are very anxious to build up their apiary quickly, and especially in skeps which are offered to them cheaply, without the opportunity of examining them. Be sure that your purchases are free from foul brood, or the consequences will be disastrous; it is a very easy matter to get an expert to examine them at a moderate cost. Also be sure you are not taking any risks to endanger the stocks you have.

PUBLICATIONS RECEIVED.—*The Estate Magazine*—a Supplement to the *Country Gentleman's Estate Book*, Edited by W. Broomhall. Contents: Lord Masham (plate), Agricultural Notes, Our Wheat Supply, Estate Notes, Forestry, Pevsney Marsh, &c.—*Transvaal Forest Report*, by D. E. Hutchins, Conservator of Forests. Mentions visits of inspection paid and various sites for plantations chosen last August by Mr. Hutchins.—*Jamaica Bulletin of the Department of Agriculture*, November. Contents: Export of Bread-fruit, Chemical Notes on Bastard Logwood (*Hæmatoxylon Campechianum*), Inoculating the Ground, Culture of the Central American Rubber-tree.—*Annual Report on the Public Gardens and Plantations, Jamaica*, for the year ended March 31, 1904. "In 1893 the Government started Mr. Cradwick on the work of instructing the peasantry in improved methods of cultivation and of curing their crops. This work has been most successful," and has increased greatly. The hurricane of August, 1903, wrought much damage, killing thousands of trees in the nursery and destroying many in the hill gardens. Great advance has, notwithstanding this, been made.—From the Ontario Agricultural College: *Bulletin 136, Some Bacterial Diseases of Plants Prevalent in Ontario*, by F. C. Harrison and B. Barlow; and *Bulletin 137, A Bacterial Disease of Cauliflower*, by F. C. Harrison.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Colonial and Home-grown Fruits.

THE meeting of the Royal Horticultural Society on Tuesday last, if not quite so large and varied as had been anticipated, was still very interesting. It is remarkable how well the new Hall looks in the dull and dismal weather we have lately experienced. Even without the aid of artificial illumination it is curious to

remarkable for the exhibition of Colonial fruit from the West Indies, Canada, British Columbia, and Nova Scotia. India, Ceylon, Australia, and other Colonies were on this occasion not represented.

To show what the Old Country can do in the way of fruit, Messrs. CANNELL, Messrs. CHEAL and others exhibited tables of Apples before which even the fruits of Nova Scotia



FIG. 181.—COLLECTION OF TROPICAL FRUITS.

(See Report of Royal Horticultural Society's Show on p. 132.)

SALES FOR THE WEEK.

MONDAY NEXT—

1295 cases Japanese Lilliums, Palm Seeds, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

TUESDAY NEXT—

Established Orchids, Orchids in flower and bud, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

WEDNESDAY NEXT—

Azaleas, Rhododendrons, Palms, Roses, Fruit Trees, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —39.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 14 (6 P.M.): Max. 46°; Min. 42°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 15 (10 A.M.): Bar. 29.7; Temp. 41°. Weather dull.

PROVINCES.—Wednesday, Dec. 14 (6 P.M.): Max. 49, S.W. Coast of England; Min. 38°, East Coast of England.

note how light the building is. It is not yet finished, but a further stage in its progress was marked by the fact that the Scientific Committee met in one of the upstairs-rooms for the first time. The staff are busied in the removal of the books and pictures from 117, Victoria Street, to Vincent Square, and those who know the circumstances will appreciate the labour and anxiety such a removal entails. It is to be hoped that the Fellows, especially those who were so desirous of seeing the Hall erected and those who derive such benefit from it, will lessen the anxiety of the staff by contributing largely to the building fund, so that the new building may not be cumbered with debt.

The show on Tuesday last was chiefly

paled. We could not expect the freshness of appearance and "quality" that were so remarkable in the Kentish Apples to be present in fruit that had travelled across the Atlantic, but it was satisfactory to find that our English growers could, if they would, supply us with fruit of a superior quality at a season when the "glut" caused by the enormous importations from America has abated. The fact that we can, and do, grow the best of Apples was once more illustrated, and once more provoked the question why the average English householder does not get the advantage of them. Cultivators must look to the business side of the matter, and study the ins-and-outs of marketing and distribution, or, what will be better, by means of combination and

co-operation secure the services of some agent whose special duty it shall be to look after the commercial interests of the growers. Subdivision of labour in this way would be productive of great benefit to producer and consumer.

But there were many visitors who were less interested with the familiar fruits of our country than with the less known products of the West India Islands. Such persons gathered round the exhibits made by the ROYAL MAIL STEAM PACKET COMPANY, the WEST INDIA COMMITTEE, MESSRS. JAMES PHILIP & Co., Messrs. ROSE & Co., and others. Trinidad, Jamaica, Barbados, Dominica, and other islands contributed samples of their produce, and in addition to Yams, Sweet Potatoes, Limes, Citrus fruits, Mangos, there were such rarities as Mangosteens (*Garcinia mangostana*) (fig. 183), that much be-praised fruit, the samples of which as exhibited did not justify their reputation. Papaw-fruit was shown under the name of "Mexican Melon." Carambola, of which we give an illustration (fig. 182), is the produce of a tree allied to the Oxalis, and the fruits are slightly acid, but serviceable when candied or used in chutney. Then there were Cocoa-pods (figs. 185, 186), Guavas, "Chrysothine," a form of *Sechium edule*; Mammee Apples (*Mammea africana*), which require to be blotted before being eaten; and a great variety of fruits, edible and inedible. Among the latter was a magnificent spike of the Cahoon Palm (*Attalea Cohun*), besides fruits of the Grugru (*Acrocomia macrocarpa*), Pater Nuts, and others more familiar.

Another Colonial exhibition will be held in March next, which will no doubt be more complete and more fully representative than the present one, wherein the Pines in particular were by no means good samples of what the West Indies can produce.

In the afternoon Mr. FREEMAN (formerly Scientific Assistant to the Imperial Department of Agriculture in the West Indies, and now Superintendent of the Economic collections at the Imperial Institute) delivered a lecture bearing chiefly on the commercial side of the question, as it concerned the West Indies, and showed how greatly the sugar-trade dominated all the rest. Cacao comes next, then fruits of various kinds, chiefly Bananas, of which the bulk go to the United States, though the consumption is largely increasing here also. The other products are varied, but insignificant in amount as compared with the others. Let us hope Cotton will soon take a high place in the returns, and justify the exertions being made by the Commissioner of Agriculture, Sir DANIEL MORRIS.

Mr. FREEMAN's lecture on "The Fruits of the West Indies" was fully illustrated with models and actual specimens of the fruits in question, with diagrams and with a long series of water-colour drawings from the Imperial Institute collection. By means of a series of specially prepared diagrams, it was shown that the exports of fruit had advanced by leaps and bounds, and fruit was now established as one of the leading West Indian industries. By far the greater portion of the trade was however, as we have said, with the United States, and the quantities of Bananas, Oranges, &c., imported into the United Kingdom from the West Indies was shown

to be very small compared with the quantities sent to the United States of America, or with the imports into the United Kingdom from foreign countries. This trade was undoubtedly capable of great expansion.

As an instance of the practical value of the work which is being carried on for the improvement of the fruit trade by the botanical workers in the West Indies, the system of Botanic Stations under the control of the Imperial Department of Agriculture was described, and it was shown how from the Dominica Station alone over 57,000 plants had been distributed to planters in one year, including large numbers of budded Oranges and other high-class fruit-plants. All who had ever handled a West Indian Lime tree would appreciate the discovery of a "spine-

tions of our Colonial fruit industry and trade, which have reached such enormous dimensions at the present day, and which have received such vigorous and continuous impulse from successive Directors at Kew, as well as from the labours of the indefatigable Commissioner, Sir DANIEL MORRIS.

The future of our commercial relations with the Colonies will soon be in the parliamentary crucible; but the forthcoming shows will indicate their pomological possibilities in the best possible way. The Royal Horticultural Society deserves well of the nation at large on account of the various works of national importance it has conducted during the past century of its history, and still continues to carry on with ever-increasing additions.

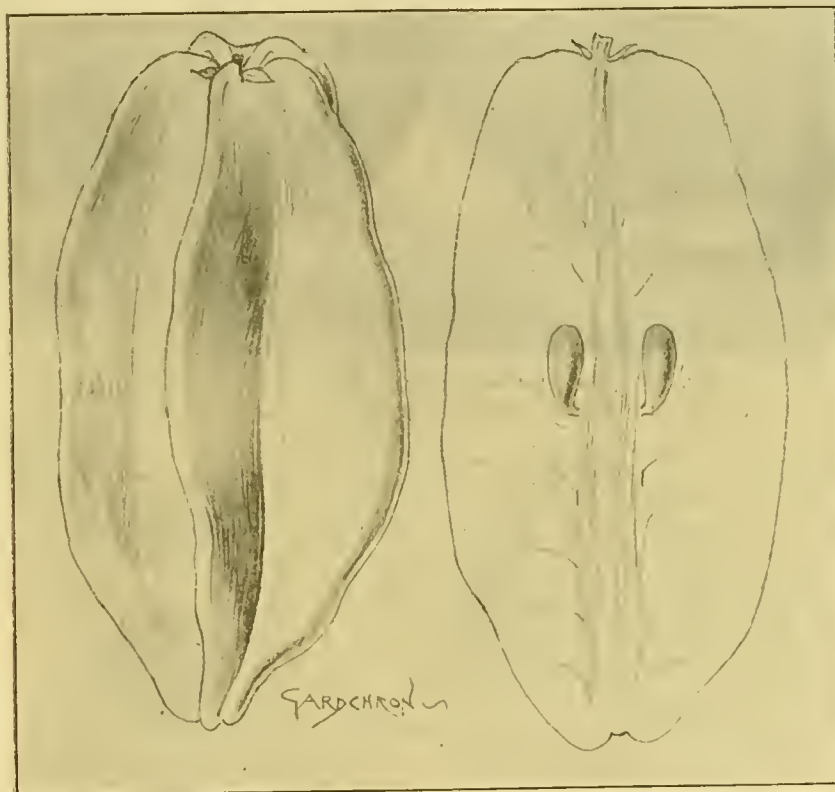


FIG. 182.—FRUITS OF AVERRHOA (CARAMBOLA).
(Sketched in Royal Horticultural Society's Hall on Tuesday last.)

less Lime," plants of which were now being distributed to planters. In other directions a large amount of work was being carried on to improve the methods of packing and grading of fruit, points of the utmost importance if confidence is to be established between producer and importer. This work must go hand-in-hand with improvements in shipping facilities.

It was the Royal Horticultural Society that first, eighty and more years ago, aided the struggling young Colonies, by supplying them, free of charge, with grafts, scions, and cuttings of the fruit-trees which were best adapted to the soil and climate in each case. The Society even went so far as to cultivate underglass many plants not adapted to our own climate, but cuttings of which were in great demand in the Colonies. By these means were largely laid the founda-

*** OUR ALMANAC.—According to our usual practice, we shall shortly issue a *Gardeners' Chronicle* Almanac for the year 1905. In order to make it as complete as possible, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.

NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION).—The annual general meeting of the above Society will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Saturday, December 17, 1904, at 2.45 P.M.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The annual general meeting of the above Society will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Saturday, December 17, 1904, at 4.15 P.M.

KEW is at all times a garden of marvels. One would not choose to go there on a damp, dull December day, but if a visit under such circumstances were necessitated, so far from regretting it, plant-lovers would appreciate it all the more. We say nothing of the Show-house, for that is always gay and attractive to the ordinary visitor, and it is not long since we noted its contents. But those whose tastes are of a more eclectic nature will find at the present time that the Aroid-house presents a vision of grace and

with its pretty rose-tinted blossoms, is in bloom; *Lindenbergia grandiflora*, with its clear yellow flowers, lights up the sombre foliage with which it is associated; *Dermatobotrys Saundersia* is also in full flower, its orange-red, horn-like flowers being so striking that one forgets the uncouthness of its name. A very old friend, *Sparmannia africana*, is in bloom, its white flowers and yellow stamens of curious structure losing nothing of their attractiveness by long familiarity. *Jacobinia chrysostephana* supplies handsome foliage and

STOCK-TAKING: NOVEMBER.—In November last year our imports were valued at some £48,723,591—last month the figures were £50,670,846, or a gain of £1,947,255. Little need to inquire how Cotton and sugar and cereals have operated on the result. Lancashire is full to overflowing with millwork; wool follows, and sugar is doing its best to look bright and cheerful amid much that is disheartening. In the matter of Wheat, &c., Russia and Argentina have come well to the rescue, but the increase has been distributed over sundry branches of trade. The following divisional table will supply the outlines of trade:—

IMPORTS.	1903.	1904.	Difference..
	£	£	£
Articles of food and drink—duty free	9,709,810	9,931,059	+221,249
Articles of food & drink—dutiable	11,073,962	11,230,493	+156,531
All other Imports...	27,939,819	22,509,294	+1,569,475

Again there is a fall in the imports of wood and timber. In November of last year we imported £1,416,814, against £1,155,769—a decrease of £261,045. It may here be noted that according to a Canadian authority a contract has been taken for the supply to the Panama Canal Company of some 600,000,000 feet of standing Columbian timber, rather a large order for even a British Columbian Directorate to take up. Concerning the imports of flowers we learn that in November, 1903, we imported £13,026, against £17,676 for the same period of this year, an increase of £4,644, and every pennyworth of this goes to building up ideals of beauty. Fruit and vegetables most claim attention, as in the table underneath:—

IMPORTS.	1903.	1904.	Difference..
	Cwt.	Cwt.	Cwt.
Fruits, raw—			
Apples	1,083,180	744,635	-338,545
Apricots and Peaches ... ..	...	6	+6
Bananas—bunches	234,261	376,647	+152,386
Grapes	127,397	195,689	+68,292
Lemons... ..	44,579	92,863	+48,304
Nuts—Almonds	38,529	29,921	-8,608
Others used as fruit	171,220	156,066	-15,154
Oranges... ..	293,202	448,294	+155,092
Pears	18,695	52,245	+33,550
Plums	1,187	689	-498
Unenumerated	16,077	10,451	-5,626
Vegetables, raw—			
Onions ... ..bush.	779,116	773,211	-5,905
Potatoes ... ..cwt.	2,042,897	188,221	-1,854,676
Tomatos	40,331	46,975	+6,644
Unenumerated ..	27,314	24,406	-2,908

Everything considered this gives a pretty good Christmas display; and the shows in the metropolis are on the average very good, and prices surely within reach of most. The value of dry fruits—currants and raisins imported in November, 1903, was £452,137 against £474,535 for last month, a gain of £22,398—little, but a gain. For the past eleven months the value of the imports is placed at £498,523,697, for the same period last year, £490,603,123, a difference in our favour of £7,920,574.

EXPORTS.

In November, 1903, the value of these was placed at £23,037,793, against £26,113,288, a gain of £3,075,495. Textiles figure largely here, as was to be expected, but other values are enhanced, and many business firms have reaped largely of success during the past two months, which we hope may be continuous. The value of goods of British and Irish manufacture exported in the past eleven months is placed at £272,745,763, against £266,277,778 for the corresponding period in 1903, a gain of £6,467,985.

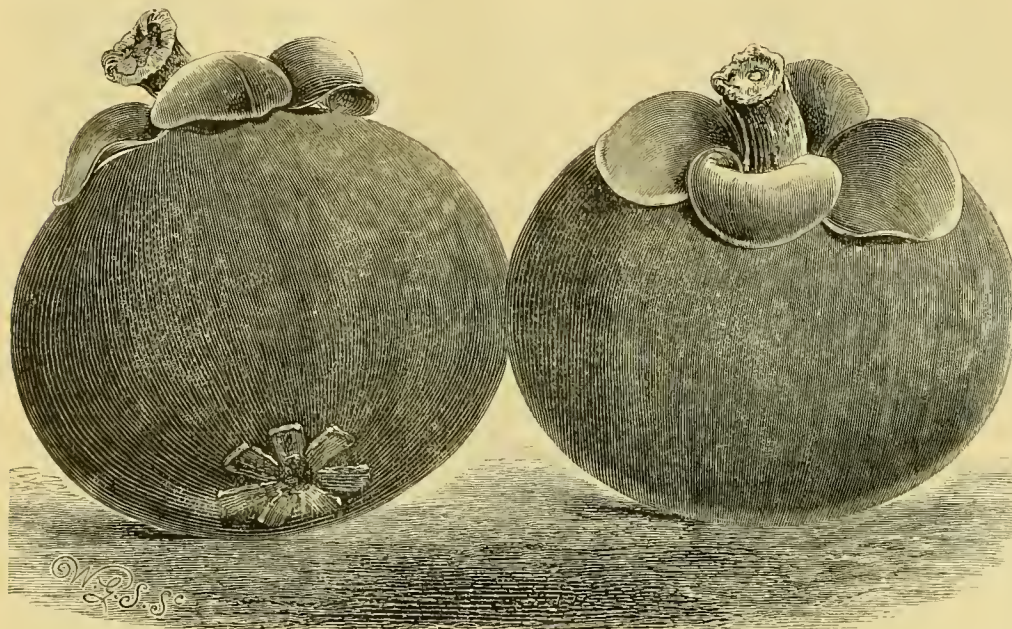


FIG. 183.—GARCINIA MANGOSTANA (THE MANGOSTEEN).
(Shown at the Royal Horticultural Society's Meeting on December 13.



FIG. 184.—SECTION OF MANGOSTEEN: SHOWING SEEDS SURROUNDED BY EDIBLE PULP.

beauty of form, to say nothing of the interest which the physiologist will find in these wonderful climbers. Then there is the Palm-house, whose noble inmates look all the more imposing in contrast to the denuded and somewhat dismal-looking trees outside. Here *Brownea Crawfordii* × (*Watson*) is now in flower. It is a cross between *B. grandiceps* and *B. macrophylla*, and its pinnate foliage is handsome enough, but its glowing scarlet-crimson flowers in masses nearly as big as a football are really astounding. In the Temperate-house the diversity of foliage strikes the visitor. The *Acacias*, with their quaint leaves, are almost as remarkable now as they will be a little later on, when the bushes are in flower. *Crinum Moorei*,

masses of bright yellow flowers; and a similar remark applies to *Reinwardtia trigyna*, a yellow *Linum*. Greenhouse *Rhododendrons* make a good show, *Aphrodito* being one of the prettiest, with its white flowers flushed with pink. There are some people who seem to have no eyes for any plant that does not lend itself to the supply of cut flowers or the fabrication of bouquets. Let such persons extend their education by periodic visits to Kew. They will there see what a wealth of beauty of form and of colour, what stateliness of aspect, what a never-failing source of interest there is among plants which do not contribute their quota to the florists' shops, and are not to be bought in the streets at a penny a bunch.

Let cultivators, manufacturers, importers, and exporters throughout the world make a note of the return—it will be worth while.

A SEASONABLE PAMPHLET ABOUT ROSES.

—The National Rose Society has published a few *Hints on Planting Roses*, by a Committee of the Society, that should prove very useful at this season of the year. The booklet is not intended for experienced rosarians, but for those less well informed, who are glad to be told which varieties are best for different purposes, and just how to plant and to treat their favourites. It may be had at a low cost on application to E. MAWLEY, Esq., Berkhamsted.

"BEAUTIFUL GARDEN FLOWERS."—MR. JOHN WEATHERS publishes through SIMPKIN, MARSHALL & Co. a handy little book with the above title. General cultural instructions are given, which will be very serviceable to the amateur or the novice. Lists of hardy plants according to the colour of their flowers or their suitability to particular purposes are given, as well as a descriptive catalogue of the most important kinds arranged in alphabetical sequence. To show that this list is up to date, we may mention that the comparatively new *Senecio clivorum* is included. There are numerous coloured plates.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are informed that the Duke of WESTMINSTER will preside at the sixty-sixth anniversary festival dinner, on June 16 next, at the Whitehall Rooms, Hotel Métropole.

ST. LOUIS EXHIBITION.—We take the following details from the report of a lecture before the Society of Arts by Mr. W. F. REID:—"The horticultural building covered 6 acres. In this building, if anywhere, one might expect to find the reason why our own fruit-growers are unable to compete with American Apples grown several thousand miles away. Professor L. R. TAFT, of the Agricultural College, Michigan, a high authority on horticulture, and the chief of this department, was kind enough to give me much interesting information on this subject. The careful grading of the fruit seems to be one of the chief elements of success. Only the finest fruit is put upon the market, inferior Apples are used for cider or other purposes. As soon as possible after gathering the fruit is placed in a cooled store, where its owner can keep it until the market conditions are favourable. Our own growers flood the market with their fruit at a time when the glut is greatest, and although the quality of their fruit may be even better than that of the imported article the price which they obtain is much lower. A little organisation should change this, and a refrigerated store in each of our fruit-growing counties ought to be a highly remunerative undertaking. At St. Louis we had thirty carloads of last year's Apples in the refrigerators, and some of them were in such good condition that when placed on the show-bench with this year's crop it required an expert to distinguish between them. Another point in which our American competitors excel is in the division of labour. It is the farmer's business to grow the fruit, and he does this with the fullest attention to those details which experience and scientific teaching have shown will lead to success. The ground is carefully tilled and manured between the trees, and insecticides are used freely if necessary. When the crop is ripe the farmer's work ends. He sells the fruit as it stands to the dealer, who, with the help of his trained hands, gathers it carefully without bruising, grades it, packs the best fruit on the spot in suitable packages, and sends it either to a refrigerated store or in refrigerator cars to the coast for shipment to our markets. During the summer a fine series of flowers was exhibited, both growing in the grounds and cut in the building. One of

the outdoor exhibits was a floral map of the United States, occupying 6 acres. In each State plants were grown representative of the agriculture

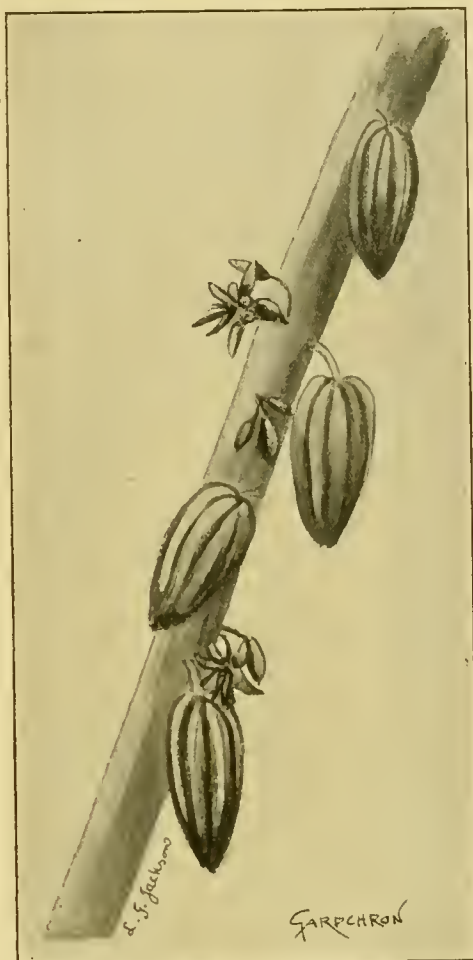


FIG. 185.—THEOBROMA CACAO (COCOA).
(Shown at the Royal Horticultural Society's Meeting on December 13.)
(Showing flowers and fruit reduced.)

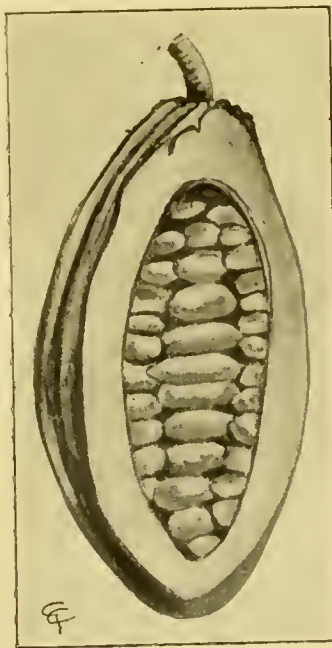


FIG. 186.—"COCOA"; SECTION OF FRUIT OF THEOBROMA CACAO.
(Reduced one-half.)

of the district." [This note should be read in connection with our remarks on the Colonial Fruit Show, pp. 427, 432. Ed.]

"CASSELL'S POPULAR GARDENING."—The nineteenth part of this useful guide opens with a coloured plate of the beautiful *Forsythia suspensa*, as an illustration to an article on "Trees and Shrubs." The cultivation of several flowering-plants and of fruits and vegetables is also dealt with in this issue, as are "Heating in Theory and Practice," "Garden Enemies," "Palms from Seed," "Table Plants," and similar subjects.

TENANT'S INJURY TO GARDEN TREES.—

Damages to the extent of £35 have been awarded in a case tried at Cardiff, in which the owner of a house at Penarth alleged that a tenant who had rented the house on a five years' agreement had depreciated the letting value by £125, owing to his having severely cut certain trees in the garden, though it was contended that what had been done was necessary in the circumstances.

THE CARDIFF GARDENERS AND FRIENDS entertained Mr. JOHN BASHAM and his son at dinner at the Sandringham Hotel on Wednesday, December 7, in recognition of the many kindnesses extended to them by Mr. and Mrs. BASHAM and family, and particularly of the hospitality shown on the occasions of the two enjoyable outings in 1903-4. E. H. BATTRAM, Esq., presided over a large and representative gathering. The toast of "Our Guests" was given by the Chairman, and was accepted with great enthusiasm. Mr. BASHAM in reply said he desired to thank the gardeners for the unexpected kindness shown to himself and family that evening. He gave a brief sketch of his career, and offered much valuable advice to the meeting in general, and concluded by saying that as long as the names of BASHAM and Bassaleg were connected those present at the dinner would be ever welcome.

QUARTERLY RECORD OF THE ROYAL BOTANIC SOCIETY.—We notice the publication of the Record, for April, May, and June, of the Royal Botanic Society of London, and the Journal of the Botanic Gardens Club. In addition to the Reports the Conference Papers are printed, and these included, in the Colonial Section, addresses by Sir JOHN COCKBURN and by Mr. C. C. LANCE; in the Educational Section, "Notes on Nature-Study," by Sir GEO. KEKEWICH; "The Farm Labourer as Skilled Workman," by Mr. F. VERNEY. Also "Forestry," by Professor FISHER; "Horticulture: Forcing Fruit-trees in Pots," by Mr. S. RIVERS; and "The Free Elements of Garden Design," by Mr. E. WHITE.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—The fourteenth annual dinner of this Society was held at the Holborn Restaurant, London, on Thursday, December 8, when about 100 members and friends assembled under the chairmanship of Mr. T. W. SANDERS, the President of the Society. An excellent dinner was served, after which the usual toasts were proposed and suitably responded to. The proceedings were marked with great cordiality, speeches being made in eulogy of the Society, and of all the officers from the President downwards. Mr. GEO. W. COOK, in proposing the toast of the National Amateur Gardeners' Association, referred to the good work the Society was performing, and to its unselfish aims. Gardening as a hobby was one of the most unselfish of all recreations, in that it gave pleasure to all the members of a family equally. They were pleased to number among their members almost as many ladies as gentlemen. Their wives and daughters were often as keen horticulturists as themselves, indeed in some branches of gardening they excelled. He was glad to know that the movement was spreading, and that they were now affiliated with other similar societies throughout

the country and in our colonies. Branches had been formed in districts as far removed as Cape Colony and Tasmania. The Chairman, who was received enthusiastically, referred in a felicitous speech to the great progress the Society had made since its inception fourteen years ago, when he, with the co-operation of a few friends, instituted the Association. An interesting feature during the evening was the presentation of prizes and trophies to the successful members at the Society's fortnightly exhibitions.

IS THE PHYLLOXERA DYING OUT?—M. LEROY suggests that this may be the case. Certain vineyards devastated by the pest were condemned in 1900 and the Vines ordered to be destroyed. For some reason or other the order was not carried out, but the vineyard was left to itself, without treatment of any kind. In 1901, 1902, and 1903, a gradual improvement was noted, till, in 1904, the Vines were seen to be covered with fruit, which ripened perfectly, few insects being found on the roots, and the leaves were also healthy. This rejuvenescence occurred not in one locality only, but in no fewer than ten known to M. LEROY, and noted by him in the *Revue Horticole*. The Phylloxera laws were often absurdly carried out, and were never effective in preventing the march of the insect across the frontiers. Happily for the Vine-growers, it seems probable that the insect may no longer be able to adapt itself to circumstances, and cease to increase in consequence.

PROPOSED SUMMER EXHIBITION FOR BIRMINGHAM.—On Friday, the 9th inst., a deputation—consisting of Councillor RANDALL, Mr. JOHN POPE, and Mr. THOMAS HUMPHREYS (Curator of the Botanical Gardens)—waited upon the Lord Mayor of Birmingham for the purpose of laying before him a proposal to establish in Birmingham a summer exhibition after the style of those held each year at Shrewsbury, and seeking his co-operation and influence in any such project. The deputation urged that, in the event of the proposal being adopted, it was regarded as essential that the Lord Mayor of the city should be at the head of the movement, and prepared to exert his power and influence on its behalf. To start with, a guarantee fund of £1,000 would be needed. The Lord Mayor expressed sympathy with the movement, but could not give a definite reply to the deputation until he had had time to consider the whole matter and to confer with other members of the City Council.

THE GREAT VINE AT HAMPTON COURT.—The King is having the vinery at Hampton Court Palace rebuilt. The old house, which has been enlarged several times, shelters the famous Vine which was planted in 1768 from a slip off a Vine at Valentines, near Wanstead, Essex. Hitherto the public have been allowed entrance to the vinery, but on account of the dust raised, which had a detrimental effect on the Grapes, the Vine in the new house will, it is reported, be protected with a glass enclosure, and through this it will be viewed by the public. The Vine will also be situated at a greater distance from the glass roof. The paving-stones forming the floor of the old vine-house are to be removed.

"AMATEUR GARDENING."—The Christmas number seems to have demanded as many ingredients and as skilful an admixture as the Christmas pudding, and we have no doubt it will in its way be pronounced equally palatable. The illustrations are numerous and pretty; but are not the Foxgloves in the plate a little too red? They seem to bring a blush to the cheek of the young lady, but there may be other causes for that, for which the Supplement should be inspected!

"WHO'S WHO" AND "WHO'S WHO YEAR BOOK."—MESSRS. ADAM AND CHARLES BLACK (Soho Square) have again issued the useful book, *Who's Who*, and have brought the information recorded down to the end of August, 1904. For reasons of space and in order that the book may be more completely what it professes to be, a biographical annual, certain tables, once a popular feature of the publication, are this year published separately under the title of the *Who's Who Year-Book*. We find in this supplement information concerning the Royal Family, ambassadors, ministers, &c., academicians, clerics, clubs, members of Parliament, Government and other officials, doctors, members of the Press, &c. These tables are in many cases more useful for reference than is *Who's Who*, because the latter contains merely short biographies alphabetically arranged.

THE IMPROVEMENT AND PRESERVATION OF TIMBER.—There have recently been made public the details of a simple but at the same time somewhat remarkable process for dealing with timber. By it not only is good material made to last longer, but many of the cheaper and softer kinds of wood can be made to take the place of harder and more ornamental timber. As in the case of many inventions, what may seem to many a trivial matter suggested the one in question. It is said that the roads in countries where the Sugar cane is grown are covered with the fibres of this plant, and that these are practically indestructible; following up this idea, Mr. POWELL has devised a process for treating timber with sugar. He has been enabled to lay down an experimental plant at Stratford and to prove that timber can be greatly improved by being boiled in a sugar solution and afterwards dried in ovens heated to a suitable temperature according to the wood dealt with. It has been shown that panels made of quite green wood from newly-felled trees, immediately after being treated in the manner described, will stand very great extremes of heat and cold, dryness and damp, without warping or "giving" in any way. Powellised timber will stand greater strains than untreated wood, and not only can cheaper products be made to do the duty of more expensive ones in the manufacture of mangle-rollers, chair-legs, pattens, and pit-props, but difficulties that always have existed can be overcome, and ornamental finish be given that before was lacking. It might be thought that the sugar would easily disappear from the wood, and that Powellised timber would only be useful for indoor work, but the sugar enters, at least into mechanical combination, with the wood-fibres, and it is difficult to extract it, while in microscopic preparations no crystals can be recognised. The result is that for fencing, paving-blocks, and so on, Powellised wood should prove exceedingly useful. We understand also that those interested in the process are willing to grant the rights to use it for a small royalty, which will obviate the necessity of carrying large quantities of timber backwards and forwards to be treated. Mr. POWELL has also discovered that it is not necessary, as at first supposed, to treat the material in a closed boiler, which is a most costly part of the apparatus, but that an open tank will do as well. In many places also ovens are already in use for drying timber artificially. Altogether there seems to be a great future before sugar-treated wood.

INFLUENCE OF GRAFTING UPON GRAPES.—M. G. CURTEL contributes to the French journal called *L'Œnophile* the results of experiments on Vines grafted on *Vitis riparia* and other stocks with a view to ascertaining what effects are produced on the fruit. He arrives at the conclusions that "appreciable differences are to be noted in the chemical and physical composition of the fruits of grafted and in that of Vines on their own roots.

The fruit of the grafted Vines is larger, has bigger seeds, a thinner skin, less differentiated, the berries are less numerous, with more abundant flesh. The juice is more copious, and usually both more acid and more sugary, less rich in phosphates, and noticeably more charged with nitrogenous matters, with less tannin and less colour, and the colour is less stable. These differences vary in different cases. They appear to be most marked with the Pinot variety when grafted on *Riparia*. Two facts are to be specially noted: the greater instability of the colour and the larger proportion of nitrogenous matters in the must. These two facts perhaps explain the more rapid maturation of wines made from grafted Vines, and their greater sensibility to injurious fermentations.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE CENSUS OF APPLES AND THE QUESTION OF "STOCKS."—"J. K. J." in the *Gardeners' Chronicle* for November 19, says in his remarks on the above subject that standard Apples should not be "worked" upon the Crab stock. There are but three stocks generally used for Apples, and only one of these three is employed by our leading nurserymen. This is the common Crab, indigenous to this country, the other two are the Paradise stock and the hybrids of our *Pyrus Malus*. No one would plant an orchard with trees worked on the paradise stock, for if he did so there would be a difficulty in getting the tree to grow sufficiently to form a large head. Supposing a large tree could be obtained, the sight of trees toppled over after a gale of wind would be much more frequent than now, from the fact that the paradise stock is shallow-rooting and fibrous. There are but two remaining stocks upon which the standard Apple can be worked to form a good vigorous and fruitful tree, capable of carrying good crops, and sustaining them against the strong gales of wind which, in the counties of Devon and Somerset especially, are so prevalent. The chief point to be considered in all stocks is the action it will exert upon the scion, and *vice versa*. This view nurserymen take into serious consideration. Of the two stocks in question, the experienced nurseryman will select the common Crab stock, a seedling from the wild Crab of our hedge rows, a true native species, coming almost perfectly true from seed; indeed so little variation occurs in a batch of thousands of seedlings as to be hardly noticeable. All varieties of Apples may be budded or grafted upon it, and they will grow equally well. The scion and stock unite and grow away vigorously and soon form good standard trees; but as vigour and fruitfulness are not usually found in combination, it is some few years before full crops are obtained, unless root-pruning be resorted to. This is seldom the case with standard trees. "J. K. J." states that this stock is awkward to work; but in the thousands I have budded this has not been the case. If a stock is too large to be successfully budded, it can without risk be grafted, even supposing it reaches the size of a man's thigh. "J. K. J." remarks that M. Charles Baltet in his well-known book advises the use of the seedling Apple. Now the use of these seedling Apples as stocks I consider to be a very grave mistake. These stocks are raised from the "pips" of our cultivated Apples, and are crosses from our own wild Crab. The "pips" are generally obtained from the cider cheese or pulp, being left behind in the press after all the juice has been pressed out; clean seed can be purchased at about £3 per cwt., whereas the common Crab Apple "pips" cost almost double that price. It will readily be judged what a miscellaneous lot of stocks is raised from the pips of this cider cheese, as every pip from the same Apple may produce a stock varying considerably in vigour and constitution from the others, and as the stock influences the scion worked thereon, it is quite evident that a very variable lot would be the result. If a batch of Blenheim Pippin were budded or grafted upon such stocks with the intention of making them standards, it would be seen that,

while many of the trees grew away well, others would not do so. The same remarks cannot apply to the Crab stock; each tree grows as evenly as its neighbour, fruits to the same extent, and lasts as long, provided they are cultivated under equal conditions. There may be thousands of standards grown in this country from such stocks, and if this be so I should say this is the class of trees "J. K. J." speaks of as being worn out. Among such a lot of cross-bred varieties we are sure to obtain stocks very variable in character, constitution, and root action. Some would prematurely give way, and leave the strong, hardy growing tree on the Crab to continue profitable for a great number of years. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

THE BEST APPLES.—In reply to Mr. A. N. Adamson's note on p. 392, Dr. Hogg's *Fruit Manual* is considered to be the most authoritative book on Apples, but the variety (?) "Honey" is not mentioned in it. Pineapple Russet I grow, but do not recommend it, the fruit is especially soft; even when hanging upon the tree, it ripens in September. The habit of growth too is most objectionable, being extra long-jointed, and forming an upright unwieldy tree. This Apple is at least 120 years old. I am surprised to hear that Worcester Pearmain has not a good colour. Has Mr. Adamson a true stock? [Mr. Adamson said that the flesh when cooked is not of a good colour. Ed.] It is of no value as a kitchen variety, but is probably the most valuable market Apple in existence, ripening early, and selling well owing to its bright appearance. Irish Peach is early, but that is its only good quality; the tree is a rambling grower, the skin of the Apples is very liable to fungus spots, and the flavour is poor. Beauty of Kent is a large, handsome Apple, good for dessert or for cooking, but perhaps too large for dessert purposes; it is not as a rule a heavy bearer, but the fruits develop a good colour. American Mother is generally rich in colour, has a peculiar "musky" flavour, and is not desirable (!). Wyken Pippin is too small to be worthy a place; its flavour in December is fair. Roundway's Magnum Bonum is a free-bearing, good keeping winter Apple, but of a rambling growth, and I shall not plant it again. Ringer and September Beauty I do not know well, they are not much grown. Northern Spy and King of Tompkins County are exceptionally shy bearers here, and the latter requires much space to grow in. I do not agree with Mr. Adamson when he says, "good-flavoured American Apples." The only variety I think good in that respect is the Newtown Pippin, which will not succeed here owing to its wanting more sun-heat. If Mr. Adamson tried an American fruit of Blenheim Pippin in comparison with an English grown fruit, he would be likely to think the home-grown produce infinitely the best. *E. Motynour, Hants.*

CANADIAN APPLES.—I have read in a county weekly newspaper a letter written by an English-woman in Canada respecting the absurdly low prices obtained for picked and graded fruit in that Colony compared with what one has to pay for it here during the first few months of the year. It appears the orchards are an imitation of our own, except that they are enclosed by "snake" fences instead of hedges, and on the outskirts are Maple trees, gorgeous in autumn with their scarlet foliage, which I assume act as a shelter to the fruit trees. The Apples are gathered in sacks and then placed in large heaps under the trees, where the packer and his men take only the absolutely perfect specimens, the slightest scab or spot, although not at all detrimental to its keeping quality, is sufficient reason for the rejection of a fruit. For these perfect specimens, the Ontario grower and gatherer gets 2s. 8d. the barrel, a trifle less than a farthing per pound, while the packer or contractor to an English wholesale firm does somewhat better, as after he has met all his outlay, wages of employees and cost of barrels (these are 1s. 8d. apiece this year) he makes 2½d. on every barrel he despatches to Montreal for England. Now it is clear that it is on this side of the water that the profit is made, as when the English retail man buys it from the wholesale merchant the

charge is 14s. the barrel. Nor is this all, for by the time the Apples reach the suburban house-keeper she pays the retailer from twelve to fourteen times the price the Ontario farmer gets for them. This ought not to be in a free trade country like ours. It is also a great pity that we do not so manage our Apple crop as to be able to put upon the market as good fruits as the Canadians or Americans send over to us, which is the only way to keep down the price, so that the working classes may be able to get fruits as well as their better-to-do brothers and sisters. *J. Mayne, Bickton Gardens, Devonshire.*

APPLES DEVONSHIRE QUARRENDEN AND WYKEN PIPPIN.—A correspondent in the issue for December 3 asked for information respecting the good or bad qualities of these Apples. They are well-known varieties suitable for orchard culture, and I have nothing but praise to bestow upon them in respect to cropping and flavour. Devonshire Quarrenden ripens with us in August, and is best eaten before Michaelmas-day. It may be more successful on the warm soil here than elsewhere, and in this county it is valued as a market variety. Wyken Pippin is now in season, and those who prefer a soft-fleshed Apple cannot plant a better one for use at Christmas. If grown as a bush or espalier in the garden the fruits attain to a serviceable size, but on orchard trees of considerable age they are rather too small for dessert. Like those of Sykehouse Russet and Court of Wick, which are of good flavour and very free in cropping, yet thin how you will the fruits do not materially increase in size. *James Mayne, Bickton Gardens, Devonshire.*

CARNATION "ENCHANTRESS."—This pink-coloured Tree Carnation has been freely exhibited at the meetings of the Royal Horticultural Society this autumn under the above name, and almost as frequently under the name of "Fascination." In the interests of those who grow and sell Tree Carnations by their legitimate names, this circumstance deserves note as the difference is mainly in the name. It is equally important to gentlemen and amateurs who desire to add new or choice things to their collections, and who are guided entirely by the notes of exhibitions appearing in the horticultural Press. Enchantress is an American production, and in London was first exhibited at the old Drill Hall more than a year ago by the well-known Carnation specialists, Messrs. Crane & Clarke, who placed it before the Floral Committee for certificate, which it did not then obtain. This honour, however, was granted to it at the late November meeting of this year, and, as a member of the Floral Committee, seeing the variety will be much grown by reason of its size and colour, I then deemed it my duty to state emphatically that the correct name is Enchantress. In one list of Carnations Enchantress may be found priced at 2s. 6d. to 3s. 6d., while in the boldest type the so-called Fascination appears at 7s. 6d. each. The twain, however, are never exhibited on the same stand. *E. H. Jenkins.*

CARNATION GLACIER AND MRS. S. J. BROOKS.—There is not the smallest doubt in my mind as to the distinctiveness of these white-flowered Tree Carnations. Messrs. Cutbush & Sons, of Highgate, exhibited flowers of both varieties at the late November meeting of the Royal Horticultural Society. Glacier is a cold dead-white, the majority of the outermost petals of a medium and uniform size, the petals and the outer ring more particularly somewhat freely, coarsely and obtusely notched. Mrs. Brooks possesses a petal of marked superiority, glistening in its whiteness, and with an outer set of petals characterised by great breadth and rotundity of outline, and a quite flat surface. The edges are only minutely and acutely toothed, while the petals, with less confused arrangement to the centre of the flower, are of a distinctly higher standard. If the flower is turned upside down the chasteness of the petal of Mrs. Brooks is at once obvious, while in breadth and general expanse it is also distinct. *E. H. Jenkins, Hampton Hill.*

CARNATION "GLACIER."—In reply to Mr. J. Murray, Sopley, we beg to state that Carnation "Glacier" is an American variety raised by Mr. C. W. Ward in 1898, and distributed in 1900, we procuring our stock from America direct. "Mrs.

S. J. Brooks" is a seedling raised at our Finchley Nursery, and is in our opinion so far superior to "Glacier" that although we have not altogether discarded the latter variety, we have not included it in our recent catalogues. In order to enable our customers to judge of the respective merits of the two varieties for themselves, we decided early in the season to prepare good stocks of each for flowering during the present winter, and perhaps those who are thus growing the varieties side by side will be good enough to give your readers the benefit of their experience. *Wm. Cutbush & Son.*

SPIRÆA LOBATA (TRUE).—Replying to Mr. S. Arnott on p. 413 of the *Gardeners' Chronicle* regarding the plant offered in our "Novelty List" under the above name, it was, we believe, originally distributed from Kew under the provisional name of *Spiræa digitata*; but during the past few years the identical plant has been received by us from various sources under the name of *S. lobata* (true). *Spiræa lobata* of the trade generally appears to be only a synonym for *S. venusta*, a North American species, and this opinion is confirmed by Nicholson's *Dictionary of Gardening*. *S. digitata* of the present *Kew Hand-List* is a native of Siberia, and it would be interesting to know if it is the same plant as was originally distributed by them under this name, or whether it is the *S. lobata* described therein, seeing that *S. venusta* is not mentioned at all. The plant known to us as *Spiræa lobata* (true) is, as S. Arnott remarks, a beautiful little plant, and has never exceeded 9 inches in height with us. *Wm. Cutbush & Son.*

PROPAGATION OF POTATOS.—The article in the *Gardeners' Chronicle* of 10th inst., from the pen of that great authority, "A. D.," on the above subject is one of the most interesting that I have seen for a long time, but I must protest against the inclusion of Johnston's Diamond, Sim Gray, Findlay's Eldorado, and King Champion at the tail end of the experiments in such a damning fashion. Would it not have been better to refrain from publishing such an unsatisfactory record of varieties sent out by other firms? I am sure every Potato grower with a spark of fair play in his nature will join with me in this protest. *William Cutbush, Rothsay.*

—Many Potato-growers besides myself will read with surprise, and not without some amusement, the article on "Propagation of Potatoes," signed "A. D.," in your issue of the 10th inst., wherein "Discovery" experiments are so fully described, but the explanation as to the four other varieties seems rather vague. We are not informed whether the numbers of pounds given is for a single plant of these or from a score, as in the case of Discovery. If single plants purchased from other sources were not raised under identical conditions, then the comparison is unequalled for, and the whole thing seems something like a gratuitous puff extolling the superiority of Discovery. Discovery I admit is generally as free from disease as most varieties in commerce, but for general excellence hundreds of growers could name many sorts which for cropping, cooking, appearance, and other qualities are far before Sutton's Discovery. These sorts would, I think, include Findlay's Eldorado, Johnson's Diamond, and Sim Gray. *William Deal, F.R.H.S.*

DRACÆNA VICTORIA.—Having read with interest the notes of Mr. Ward, Mr. Knight, and "E. B." on the above plant, I am glad to know that Mr. Ward and "E. B." have grown this beautiful *Dracæna* so successfully. I have one in my charge, and it is blotched as described by Mr. Knight. It has, however, shown no tendency to die after being topped. We have two nice little pieces now well established, and another almost ready to come off; both were taken off and rooted in the same way as we treat *D. Lindenii*, and they seem to root freely. A year ago our plant was much blotched, and in some cases the blotches had become holes. It was put into comfortable quarters, where the plant made a few leaves early in the season; then we took off the top, and it started away splendidly and grew well for some time; but again it became blotched. It is now about 15 inches high, and there are not more than half-a-dozen leaves free from blotch. It was grown in

the stove with a batch of other *Dracenas*. Perhaps some other readers who have grown this handsome plant will relate their experiences. A. C., N.B.

WOOLLY APHIS ON AURICULAS.—Some year or two ago Mr. E. Dean stated in the *Gardeners' Chronicle* that the woolly aphis on Auriculas could be entirely destroyed by putting the plants out in the open ground, and in the Annual Report of the National Auricula Society (southern section) for 1902, Mr. Henwood printed a letter from Mr. W. Badcock, saying that "he planted out his collection two years previously, after blooming, the plants being then badly infested with the woolly aphis; on taking them up to pot at the end of July, he found them quite clean, and he has not seen them (aphis) since." In November, 1903, I planted out about two dozen plants in West Wickham churchyard, the plants being infested with aphis. I hoped to find them clean on lifting them in the following June, 1904, but found them rather worse. Last month, in the garden here, I removed a number of plants from a north border; some had been there one, some two and some three years; in each case they were badly infested. What is the cause of my failure to rid the plants of this troublesome pest? F. W. Price, Broadclyst Garden, Beckenham.

The statement in the *Gardeners' Chronicle* as to the woolly aphis on the Auricula being entirely got rid of by planting in the open ground, was made by me on the authority of a letter received from Mr. W. Badcock, of Reading, and was not based upon my own experience. I did not represent the planting-out system in the case of your correspondent, but both Mr. Henwood and myself appeared to think the experience of Mr. Badcock was worthy of being recorded. R. Dean.

PLANT NOTES.

CALLICARPA PURPUREA.

We have this species planted-out against the glass front of our Palm-house, a position that suits it very well, as is shown by the enclosed shoots, 2½ feet in length, which are wreathed with small, deep violet-coloured berries. The individual flowers are very inconspicuous, but the berries are borne in dense clusters. The plants need much light and a moderately dry atmosphere while in flower, but ample root waterings while making active growth. After the berries have "set" the plants may be syringed with water once or twice daily, for our plants are treated with the hose, and suffer but little harm. Early in the spring we prune back the growths as we do those of *Bougainvillea glabra*, and rub off superfluous growths so that no crowding shall occur. Cuttings may be rooted easily if taken when about 4 inches long and inserted in the propagating case in sandy soil containing a little peat. The subsequent treatment consists in pinching out the points of the shoots a few times, and generally in the culture applied to *Bourvardias* or *Fuchsias*. The shoots are pinched and all the flowers removed up to the latter part of July, then the plants are allowed to make free growth, and the air about them is kept constantly moving. A light shade is afforded over the glass until the end of September. Pots 5 or 6 inches in diameter are sufficiently large to contain effective decorative plants. These plants can be rested after their beauty has passed, and can be grown on another year, but as a rule young plants raised each spring give the best results. Mealy-bug is the only insect that I have found troublesome, and as the foliage is of a woolly or hairy nature, the pests are difficult to dislodge if once they are allowed a footing. The plant under notice makes a good companion to the pretty scarlet-berried *Rivina humilis*, so useful for winter decoration. James Moyné, Bilton Gardens, Devonshire.

SOCIETIES.

THE ROYAL HORTICULTURAL.

DECEMBER 13.—The meeting of the Committees of this Society held on the above date in the Royal Horticultural Hall, Vincent Square, Westminster, was more varied than usual owing to the exhibition of Colonial fruits, the first of such a nature that the Society has organised. The schedule was divided into fifteen classes, ten of which were assigned to fresh fruit and vegetables, and the remaining five were allocated to preserved fruits, jams, &c. The first class was for a general collection of Colonial-grown fruit. There were also collections of Apples (both cooking and eating), and Pears. Classes were provided for Pineapples, Bananas, Mangos, Grapes, and other Colonial-grown fruits. There was also a class for Yams, Sweet Potatoes, and other vegetables.

In the second division three open classes were provided for preserved and bottled fruits, including jams of Home, Colonial, and Foreign origin. Two classes were allotted to British-grown fruits bottled by the exhibitors entirely for their own household consumption.

The Colonies officially represented were Canada, British Columbia, Nova Scotia, and the West Indies.

Further interesting exhibits of West Indian fruits and products were entered by the ROYAL MAIL STEAM PACKET CO., Messrs. J. PHILIP & CO., and the DOMINICA AGRICULTURAL SOCIETY. Remarks upon the Colonial fruits other than Apples will be found on pp. 426, 427.

The ordinary Committees had rather less to do than usual. The FLORAL COMMITTEE made no award to a novelty. The FRUIT AND VEGETABLE COMMITTEE made but two awards, both of which were to Potatoes; and the ORCHID COMMITTEE made four Awards of Merit and one Botanical Certificate.

An exhibit of Apples from Messrs. H. CANNELL & SONS was deservedly awarded the Society's Gold Medal, and compared very favourably with the best specimens from the Colonies.

In the afternoon there were twenty-six new Fellows elected, and a lecture was delivered upon "The Fruits of the West Indies," by Mr. FREEMAN (see p. 427).

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. E. H. Jenkins, W. P. Thomson, Jas. Walker, Jno. Green, Geo. Nicholson, J. F. McLeod, G. Renthe, C. Bick, J. Jennings, J. A. Nix, R. C. Notcutt, R. Hooper Pearson, H. Barnes, Geo. Gordon, W. Bain, Chas. Jeffries, Chas. Dixon, C. E. Pearson, H. J. Cutbush, W. Howe, Chas. E. Shea, W. Cuthbertson, H. J. Jones, W. G. Baker, and W. J. James.

Messrs. SUTTON & SONS, nurserymen, Reading, exhibited a batch of plants of *Cyclamen* in pots. The collection was comprised of two varieties, one of a salmon-pink colour and the other of a pure white, arranged in two rows, with small Ferns suitably interspersed. The plants were freely flowering, and the strain is evidently an excellent one. The white variety produces a large flower of great purity. Both kinds possess pleasingly "marbled" leaves, which add to their decorative character.

Messrs. W. WELLS & CO., Ltd., Earlswood, Redhill, Surrey, set up a group of "single" *Chrysanthemums*. The variety Dorothy Fortescue has large quilled ray florets radiating like the spokes in a wheel, giving it a distinct appearance. We noticed the parent of the florists' *Chrysanthemum*, *C. indicum*, with flowers of the size of a Buttercup, and of the same shade of yellow colour (Silver Banksian Medal).

Messrs. WM. BULL & SON, nurserymen, Chelsea, contributed a collection of pot-plants of economic value. The plants were shown in small 48-sized pots, and embraced members which produce such products as Black Pepper, Cotton, Vanilla, Coffee, Dates, Sarsaparilla, Angostura Bitters, Cardamoms, and other similar subjects (Silver-gilt Banksian Medal).

Mr. H. B. MAY, Dysons Lane Nurseries, Upper Edmonton, exhibited a collection of greenhouse plants, *Begonias*, *Ericas*, *Primula obconica*, *Cyclamen*, *Poinsettias*, &c. (Silver Flora Medal).

Messrs. BARR & SONS, 11, 12 and 13, King Street, Covent Garden, displayed a number of dwarfed Japanese Conifers, also *Narcissi*, Roman *Hyacinths*, a batch of *Primula Forbesii*, &c.

Messrs. J. LAING & SONS, The Nurseries, Forest Hill, London, staged a group of *Begonias* of the Gloire de Lorraine type.

Mr. J. AMBROSE, Nurseryman, Cheshunt, staged a miscellaneous collection of flowers and greenhouse plants, Grapes, &c., similar to the collection staged by him at the last meeting of the Society.

Messrs. W. CUTBUSH & SON, Highgate, London, N., staged a group of berried and ornamental shrubs, *Hollies*, *Pernettyas*, *Skimmias*, *Citrus sinensis*, ornamental Conifers, &c. Messrs. CUTBUSH also exhibited a collection of Alpine plants, including *Petasites fragrans*, *Iris alata*, *Crocus hyemalis*, *Hellebores*, &c. (Silver-Gilt Banksian Medal).

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, contributed a collection of berried shrubs and variegated *Hollies* (Silver Banksian Medal).

A spray of *Stephanotis floribunda* carrying a fruit upon it was shown by J. ROLLS-HOARE, Esq.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshaw, W. A. Bilney, N. C. Cookson, W. Bexall, W. H. Young, H. A. Tracey, A. A. McBean, W. H. White, G. F. Moore, H. Ballantine, R. G. Thwaites, J. Douglas, F. Wellesley, E. Ashworth, W. Cobb, H. Little, and W. Bolton.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, staged a very fine group, in which a large number of well-flowered *Trichopilia snavis* formed the centre and margin, that beautiful white-and-rose-coloured, fragrant Orchid being displayed to great advantage. A Silver-gilt Flora Medal was awarded for the group, which was made up of a number of the showy orange-and-red *Laelio-Cattleya* × *Charlesworthii*, several of the primrose-coloured *L.-C.* × *Lydia* (Cowani × *Gaskelliana* alba), *L.-C.* × *luminosa*, several of the peach-blossom-coloured form of *Laelia* × *Digbyano-purpurata*, *Oncidium incurvum* album, the new and finely-coloured *Cypripedium* × *Sunray* (*Charlesworthii* × *Lecanum Albertianum*), &c.

Sir WILLIAM CLAYTON, Bart., Harleyford, Marlow, Bucks (gr., Mr. J. Sharpe), was awarded a Silver Banksian Medal for a fine group of splendidly-grown and well-flowered *Calanthe* × *Veitchii*. The flowers were of a bright carmine-rose colour, and the elegant sprays of flowers were effectively arranged with Ferns and foliage plants.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed *Cypripedium* × *Sandero-selligerum* (*Sanderianum* × *selligerum*), an attractive hybrid, with an ovate acuminate dorsal sepal, whitish with purple lines, and downward curved, petals 6 inches in length, whitish tinged and spotted with brownish-rose, the elongated compressed lip being of the same tint. Also the fine Burford variety of *Odontoglossum* × *Duvivierianum*, and the elegant little *Gomesa Binotii*.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. Chapman), showed the purple-spotted *Odontoglossum Pescatorei Charlesworthii*, which had previously obtained a First-class Certificate. The vigorous plant bore a branched spike of thirty flowers. Mr. COOKSON also showed the very handsome *Odontoglossum* × *Andersonianum* "Oakwood variety," a strong plant of *Cypripedium* × *Lecanum* *Clinkaberry-anum* with four flowers, and the new *Cypripedium* × *Dom Carlos* (see Awards).

Captain G. L. HOLFORD, C.I.E., Westonbirt (gr., Mr. Alexander), sent *Laelio-Cattleya* × *Ophir superba* with bright orange-coloured flowers, *Laelio-Cattleya* × *Ingrami magnifica* with an intensely dark claret-purple lip, *Epi-Cattleya* × *Liliane* (E. *costaricensis* × *C. Gaskelliana* alba), a very remarkable hybrid with white fragrant flowers; and the new *Cypripedium* × *G. F. Moore*, a very handsome and dark-coloured flower of the *C.* × *Euryades* class, but larger and broader in the dorsal sepal.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), sent *Cypripedium* × *nitens* Westfield variety, with a good flat dorsal sepal, finely spotted, the upper part being white with rose spots; *C.* × *Charlesianum* aureum, yellow with white tip to the dorsal sepal, which bore some small purplish spots; *C.* × *Angelicae superbum*, and *C.* × *westfieldense* (*Lecanum superbum* × *Pollettianum*). The flowers had the polished

surface and rich colouring of *C. x triumphans*, but with smaller spotting and more white on the dorsal sepal.

Messrs. SANDER & SONS, St. Albans, sent a small collection of hybrid *Cypripediums*, of which the finest were *C. x Helen II.* var. *Exquisita*, of the same class as the var. *Fascinator*, for which they received a First-class Certificate at a recent meeting; *C. x nitens Monarch*, and *C. x Hitchinsie pulchrum*. Messrs. Sander also showed the handsome *Lælio-Cattleya x Phryne* (*L. xanthina x C. Warszewiczii*) with yellow sepals and petals and rose-coloured lip.

WALTER COBB, Esq., Tunbridge Wells, sent *Cypripedium x Prospero* album with very pale-greenish flowers and much white in the dorsal sepal.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard), showed *Cattleya Percivaliana* "Little's variety," with a brightly-coloured, showy labellum.

W. M. APPLETON, Esq., Weston-super-Mare (gr., Mr. J. H. Brooks), sent *Lælio-Cattleya x Clive superba*, *Cypripedium insigne Brooksii*, *C. tessellatum nigrum*, *C. x Fred Hardy* excellens, and *C. x Thornianum* (*Charlesworthii x Sallieri Hyeannum*).

Mr. H. A. TRACY, Twickenham, showed the fine *Cypripedium x Traeyanum* (see Awards), and a pretty rose-tinted hybrid between *C. ciliolare* and *C. Charlesworthii* with four flowers.

J. WILSON POTTER, Esq., Elmwood, Croydon (gr., Mr. W. H. Young), showed *Odontoglossum x waltoniense* Elmwood variety (*crispum x polyxanthum*). The flowers were of good shape, canary-yellow-coloured, with several brown blotches on each sepal, an occasional spot on some of the petals, and a large chestnut blotch on the lip.

R. I. MEASURES, Esq., Camberwell (gr., Mr. Smith), sent examples of *Cypripedium*.

Messrs. HUGH LOW & CO., Bush Hill Park, showed *Cypripedium insigne* Mrs. F. W. Moore, a strong-growing, bright yellow-and-white variety.

Messrs. STANLEY & CO., Southgate, staged a small group of *Cattleya Loddigesii*, one variety of which had peculiar purplish lines in the sepals and petals: *Cypripedium x Leeannum giganteum*, and other varieties, *C. x Niobe*, and *Lælia autumnalis unicolor* were also included.

The MARQUIS DE WAVRIN, Château de Ronsele, near Ghent, sent two plants of *Lælio-Cattleya x ronseleensis* (*C. Forbesii x L. cinnabarina*). The flowers were orange-yellow-coloured with rose-purple markings on the lip. The information given with the plants was that the seeds, which were borne by *C. Forbesii*, were sown on April 24, 1902, and the first flower opened on December 1, 1904, being a little more than two years and seven months from the time of sowing. A very remarkable circumstance.

AWARDS OF MERIT.

Cypripedium x Dom Carlos (*Godefroyæ leucocentrum x Lawrenceanum*), from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. Chapman). A very pretty hybrid of distinct features, and which, when strong, will develop still finer qualities. The flower was cream-white, with a slight greenish tint on the dorsal sepal, which with the petals and inside of the labellum was finely spotted with purple.

Cypripedium x Truycanum (*aureum x Leeannum giganteum*).—A very stately flower, with much of the good qualities of both parents, the dorsal sepal being finer than in either in the broad display of pure white in the upper half, the white extending to the base, which is emerald-green, with a broad, dark, claret-purple band. The petals and lip are of thick texture, the former undulated at the edge, yellow-coloured tinged with purple.

Cypripedium x aureum Lambianum (*Sallieri Hyeannum x Spicerianum virgiale*), from ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow (gr., Mr. Holbrook).—Nearest to *C. aureum Surprise*. Flowers pale greenish-yellow, the upper half of the dorsal sepal white.

Cattleya labiata "Mrs. Gustave H. Muller," from Messrs. HUGH LOW & CO.—A very delicately tinted variety. Sepals and petals white tinged with lavender colour, a bluish-lilac blotch being on the front of the lip.

BOTANICAL CERTIFICATE.

Gomesa Binotii, from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White). An elegant Brazilian species with a profusion of racemes of small orange-coloured

flowers with white columns. The plant bore twenty racemes of from fifteen to thirty flowers each.

CULTURAL COMMENDATION.

To Mr. Holbrook, gr. to ELIJAH ASHWORTH, Esq., for a singular *Dendrobium* which had been grown from a small plant, but now had become a vigorous specimen. It was purchased as *D. Williamsianum*, but bore no resemblance to that species as illustrated in the *Gardeners' Chronicle*, 1886, p. 173.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. W. Bates, Jas. Gibson, S. Mortimer, A. Dean, H. Parr, W. Fyfe, W. Pope, Thos. Coomber, H. J. Wright, J. Lyne, F. Q. Lane, G. Reynolds, J. Willard, Geo. Norman, J. Jaques, O. Thomas, A. H. Pearson, and Jos. Cheal.

Mr. Chas. Ross, gr. to Colonel WAUCHOPE, Welford Park, Newbury, exhibited fruits of the Pear General Wauchope, and of a seedling named R. D. Blackmore. The seedling was from a cross between the varieties Winter Nelis and Comte de Lamy. The fruits were small in size, and in general appearance were similar to very small fruits of *Glout Moreau*.

Mr. H. H. RASCHEN, 12, Manor Road, Sidecup, exhibited some fruits of a small conical-shaped Apple named Pigeon Blanc.

Moderate-sized new tubers of the Sir John Llewelyn variety were shown by the Hon. A. H. T. MONTMORENCY, The Grange, Carrickmines, Co. Dublin (Cultural Commendation).

Some tubers of a very long Potato having deep eyes, and named Earl Marischal, were shown by Mr. M. H. SINCLAIR, 156A, Union Street, Aberdeen. One of the tubers was shown in a cooked condition, but no award was made.

LORD LLANGATTOCK, The Hendre Gardens, Monmouth, staged five Pineapples of the varieties Charlotte Rothschild and Smooth Cayenne. They were superb examples, and in comparison with similar fruits exhibited in the Colonial section were as Blenheim Pippins are to ordinary Crab Apples (Silver-gilt Knightian Medal).

Sir W. PEARSON, Paddockhurst, Sussex (gr., Mr. A. B. Wadds), brought three plants of Bananas in tubs, two of which were carrying bunches of fruit. From the same gardens also came a number of Orange-plants bearing fruit, which were, however, only in the unripened stages (Silver Knightian Medal).

LEOPOLD DE ROTHSCHILD, Esq., Gimmersbury House, Aeton (gr., Mr. Jas. Hudson), staged a basket of "bitter" Oranges, such as are used in the making of preserves. Considering they were grown in such proximity to the metropolis, the fruits were excellently finished, and deserved the Cultural Commendation awarded by the Committee.

Several seedling Apples and a variety of Pear were presented for award, but none were sufficiently meritorious to receive recognition from the Committee.

Messrs. CANNELL & SONS, Swanley, Kent, staged a superb collection of Apples and Pears. There were as many as 245 distinct varieties included in the exhibit, which contained fruit of the highest standard of quality throughout. The style of staging adopted was effective, several fruit-stands being utilised towards the centre, while the dishes more towards the background were somewhat elevated, enabling their contents to be readily observed. As would be imagined from such a number of varieties, the collection was very representative, and we can only name a very few that especially appealed to us, such as Blue Pearmain, Wadhurst Pippin, Emperor Alexander, Blenheim Pippin, Adam's Pearmain, Gascoyne's Scarlet Seedling (excellent examples), Peasgood's Nonesuch, Cox's Orange Pippin, and Belle de Boskoop. Among the dishes were a few varieties of Pears (Gold Medal).

Messrs. J. CHEAL & SONS, Crawley, staged a collection of Apples, all excellently grown, and with colour well developed in most of the varieties. Among the best examples noticed were Gascoyne's Scarlet Seedling (an exceptionally fine dish), Paroquet, Hollandbury, Emperor Alexander, Lane's Prince Albert, Warner's King, Bismarck, and Allington Pippin (Silver Knightian Medal).

COLONIAL-GROWN APPLES.

THE AGENT-GENERAL FOR NOVA SCOTIA set up a noteworthy collection of Apples, coloured to the degree only possible in this country in exceptionally favoured seasons. The fruit bore little evidence of having

suffered in transit and was nearly as fresh in appearance, and many of the varieties with as fine a "bloom" as though gathered and placed direct on the dishes. Red Russet, Wagner, King's, Blenheim Pippin, Fallawater, Gloria Mundi, Ben Davis, &c., were among the more striking varieties of this excellent collection (Silver-gilt Knightian Medal).

THE DOMINION OF CANADA sent a collection of Apples, for the most part very highly coloured, and by the indications of bruises very soft in texture. Still it must be borne in mind the great distance they had travelled. Harbottle, Golden Russet, Wagner, Baldwin, Fallawater (a large fruit somewhat resembling our "Councillor" in appearance), Mann, and Seeks, were some of the best varieties of the collection, judging from appearances only (Silver-gilt Knightian Medal).

THE AGENT-GENERAL FOR BRITISH COLUMBIA almost filled the north annex with a collection of Apples such as was seen on a recent occasion. This collection contained fruits of good size and of exceptional colour, and considering the enormous distance travelled they presented an excellent appearance. The varieties are almost all new to this country, or unrecognisable under the names known to us (Gold Medal).

AWARDS OF MERIT.

Potato Queen Alexandra.—Tubers of this variety having been cultivated at Wisley, and subsequently cooked for tasting by the Committee, an Award of Merit was now recommended. The tubers were of average size, and round rather than long in shape. The variety was sent to Wisley by Mr. COLEMAN, Tonbridge.

Potato Peckover.—This variety was illustrated in the *Gardeners' Chronicle*, October 22, 1904, after it had gained 1st prize at the Crystal Palace in a collection of seedlings. The tubers submitted to the Committee on Tuesday had been grown at Wisley, where they were sent by Mr. J. W. BOYCE, Welling.

PRESERVED FRUITS.

In the competitive classes for exhibits of preserved British-grown fruits there was moderate competition. In the class for eighteen bottles, including not fewer than six different kinds, shown by exhibitors who do not sell their produce, there were several commendable exhibits, the 1st prize being awarded to Mrs. BANKS, Hasland Hall, Chesterfield. 2nd place was given to Mrs. E. BECKETT, Aldenham Park, Elstree, Herts. 3rd to Mr. C. O. WALTER, Ickleton House, Wantage, Berks. So far as was observable from external appearances, the fruits appeared to be very similar in quality, and equally well preserved.

In the class for a dozen bottles, to include not fewer than four different kinds, with similar conditions attached as in the former class, Mrs. W. H. FLOWMAN, Heath Cottage, Beddington Corner, Mitcham, won the 1st honours. This lady is the wife of Mr. FLOWMAN, who is engaged in the Royal Horticultural Society's office, and who is doubtless known to many of our readers. We congratulate Mrs. FLOWMAN on her success. 2nd Mrs. H. V. THOMPSON, 19, Portman Square, W. 3rd, Mr. HENRY BATES, Salisbury Villa, Robertsbridge.

THE BRYNDEN HORTICULTURAL SOCIETY, Brynden, Abergavenny, exhibited excellent examples of bottled fruits.

Mr. E. M. COOKE, Cherry Tree Cottage, Yateley, Camberley, showed specimens of fruit jellies.

Mr. W. BELSTER, The Orchard, Elsenham, Essex, showed a collection of jams, jellies, and bottles of distilled lavender-water.

Mr. H. G. LITTLE, 1, Eastgate Row, Chester, showed a number of bottles of fruit preserved whole.

R. MARTIN-HOLLAND, Esq., Overbury Court, Tewkesbury, exhibited a case containing dried fruits—Plums, Apples, Apricots, &c. (Silver Banksian Medal).

Messrs. VATEMAN & CO., Ltd., Denmark Street, London, E., sent a collection of jams, preserved fruits, and jellies.

LADY WARWICK'S COLLEGE, Studley Castle, Warwickshire, staged preserved fruits, jellies, jams, &c. Fancy bottles and jars were requisitioned for their reception, and the style of staging adopted was extremely artistic.

THE HORTICULTURAL COLLEGE, Swanley, Kent, contributed bottled fruits, vegetables, jams, jellies, &c.

Messrs. FOWLER, LEE & CO., Maidstone, set up a number of bottled fruits, &c., preserved by means of their patent bottling appliances, examples of which were exhibited on the same stand.

Messrs. C. LUNN & CO., Kirkburton, Huddersfield, showed examples of their patent air-tight glass jars, also filled examples of the same.

Messrs. E. & T. PINK, Staple Street, Berongh, the well-known jam manufacturers, staged samples of their products.

Miss E. INGERSON, Moor Place, Much Hadham, Herts, displayed several bottles of preserved fruits.

Miss M. RIGBY, the Yacht Hotel, Guernsey, sent sterilised Guernsey produce. The fruit and vegetables in this collection were of excellent appearance.

The Imperial Institute, South Kensington, sent an educational and interesting contribution in a number of models of Colonial fruits and cleverly executed water-colour drawings of the same.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 24 and DECEMBER 8.—A very severe frost prevailed upon the date of the first meeting, and prevented many from bringing exhibits; nevertheless a few plants were shown which should be recorded.

M. CH. VUYLSTEKE, Leechristi, Ghent, exhibited a small group of good *Odontoglossums*, one of which, a fine variety of *O. × ardentissimum*, was voted a First-class Certificate. A Cultural Certificate was awarded to *O. × crispo-Harryanum*.

E. ROGERSON, Esq., Didsbury (gr., Mr. Blomley), exhibited a hybrid between *Laelia tenebrosa* and *Cattleya bicolor*, to which a First-class Certificate was given. The same amateur received an Award of Merit for *Cypripedium Chas. Richman superbum*.

Dr. A. B. RITCHIE, Manchester, made his *début* as an exhibitor with a nice variety of *Cypripedium × Milo* called *Summer Lea* var., which received an Award of Merit.

WALTER LAVERTON, Esq., Victoria Park (gr., Mr. Smith), staged a group of *Cypripediums*, and obtained a Silver Medal.

Messrs. F. SANDER & SONS, St. Albans, and J. COWAN & Co., Gateacre, received Bronze Medals for good groups.

Votes of Thanks were accorded to Dr. ROBERTS, Altrincham; C. VUYLSTEKE, Ghent; and S. J. KEELING & SONS, Bradford.

On December 8, there was a fine display of plants, *Cypripediums* being shown numerously.

Messrs. CYPHER & SONS staged a choice and well-grown group of plants, among which were some good varieties. A hybrid *Cypripedium* between *C. Harrisonianum* var. *superba × C. Mastersianum* was selected for an Award of Merit, also *C. insigne* var. "Commander-in-Chief," and *C. insigne* var. *bisejalae*. A Silver Medal was voted for the group.

Messrs. CHARLESWORTH & Co., Bradford, received a Silver Medal for a choice collection of plants. *Cypripedium × Carles* received a First-Class Certificate, and an Award of Merit was voted to *C. insigne giganteum* var. *heatonensis*.

Dr. ALEX. HODGKINSON (gr., Mr. Moore), exhibited *Cypripedium glaucophyllum*, a species closely resembling *C. Chamberlainianum* (Award of Merit), and a Cultural Certificate was given for a fine plant of *C. insigne* var. *Sanderæ*.

O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers), obtained First-Class Certificates for *Cypripedium × Earvades* var. *incomparabilis* and *C. insigne* var. *Glady's*, the latter being one of the best yellow-coloured varieties yet seen.

S. GRATRUX, Esq. (gr., Mr. Cypher), obtained Awards of Merit for *Cypripedium × Evelyn Ames*, and *C. × Mr. F. Sander*.

A. WARBURTON, Esq., Haslingden, obtained a First-class Certificate for a fine hybrid *Cypripedium* named *C. × Victor*, the parentage of which is somewhat doubtful. It is of large proportions, and quite distinct in colouring.

E. ASHWORTH, Esq., Wilmslow, exhibited a very chaste *Cypripedium*, a variety of *C. × aureum* called *Lambianum*, to which an Award of Merit was voted.

Dr. E. ROBERTS, Hale, obtained an Award of Merit for *Cypripedium insigne* var. *Luna*.

Messrs. A. J. KEELING & SONS, Bradford, received Awards of Merit for *Cypripedium insigne* var. *Mars* and *C. × Prewettii* var. *superba*. A Bronze Medal was awarded for the group.

WALTER LANCETON, Esq. (gr., Mr. Smith), received a Bronze Medal for a group.

J. COWAN & Co., Ltd., Gateacre; D. McLEOD, Manchester; and G. W. LAW-SCHFIELD obtained Votes of Thanks for various exhibits. P. W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the last meeting of the Committee of this Society four new members were elected, making a total of ninety-five for the year. Nineteen members have received sick-pay during the month, eight being on the Sick-Fund at the present time. The amount of sick-pay for the month was £34 10s.

NATIONAL POTATO SOCIETY.

DECEMBER 7.—The first annual general meeting of the National Potato Society was held in the Agricultural Hall, Islington, on the above date. Mr. A. D. Hall explained that, owing to the non-receipt of the results of one or two of the Society's Potato-trials, it had been found impossible to complete the report of the Society's work in 1904. The Secretary had, however, drawn up a summary of the report.

The outstanding features of the summarised report, read by Mr. Wright, were that the Society's show at the Crystal Palace on October 11 and 12 was a great success, and returned a profit to the Society; that an audit taken of the varieties then exhibited showed that 453 distinct sorts were staged, 270 of which, chiefly novelties, were shown once only; that the balance-sheet showed a profit on the year's work of £46 18s. 3d.; that an election among the members had been held with a view to providing interested persons with lists of standard varieties; that a series of trials had been carried out; and that the members joining the Society up to November, 1904, totalled nearly 300 private members and 1,500 affiliated members, making a grand total of nearly 2,000 members.

The report, which was unanimously adopted, extends to 64 pages, and will be issued very shortly.

THE CHAIRMAN AND THE TRIALS.

Mr. A. D. Hall thought that, despite the scoffers who said that trials would only show them what they already knew, a good deal of valuable information would be gathered from reports of the trials, and that the conclusions arrived at could not fail to be of benefit to farmers and small growers alike. He had gone carefully into the subject of the cost of future trials, and found that to test a large number of sorts would be a somewhat expensive proceeding. Each variety tested should have 2 sq. rods of ground allotted to it, and as there were 453 varieties staged at the National Potato Society's show, and these would be supplemented by other new sorts, the Society would require from 5 to 6 acres of land for testing purposes. The cost could be fairly put at £15 per acre, which was not allowing any payment for supervision, and would not be lessened materially by the sale of the produce.

THE NEW OFFICERS AND COMMITTEE.

After making the above remarks Mr. Hall vacated the chair to Mr. Gordon, under whose presidency the meeting proceeded to elect officers for the ensuing year. Practically the whole of the present officials were re-elected. A list of Vice-Presidents was laid before the meeting, the names of several influential Potato people being proposed for that position by Mr. Wright and elected unanimously. The following are the gentlemen so elected:—Messrs. A. W. Sutton, V.M.H.; G. Bunyard, V.M.H.; W. Cuthbertson, — Daniels, John Green, W. Varlow, G. Beale, A. Findlay, — Fidler, and E. O. Greening.

DISTRICT COMMITTEES.

With a view to extending the sphere of the Society, Mr. Wright proposed the institution of District Committees, each with a secretary and correspondent having seats on the Executive Committee. He read a list of names of gentlemen in various parts of the kingdom who had signified their willingness to act in the capacities indicated, and hoped that the meeting would look upon the idea with favour. The motion was carried unanimously. The following are the first appointments: *Boston*, Messrs. E. J. Deal and W. R. Porter; *Spalding*, W. J. Atkinson and G. Massey; *Lincoln*, G. D. Blanshard and F. Pickering; *North Lincs.*, T. J. Blaydes; *York*, Jeff. Poad; *Warminster*, Hy. Scott; *Cambridge*, Prof. Middleton and Mr. W. Heushaw; *Dundee*, W. P. Laird; *Perth*, J. Gardiner and L. Anderson; *Dunafries*, M. Wallace and D. Arnott; *Edinburgh* and the *Lothians*, Harry Hope and W. Davie; *Jersey*, E. J. Ashelford; *Montrose*, D. Spence; *Reading*, Prof. Percival and Mr. C. Foster; *Wimborh*, R. W. Green; *Cranbrook*, H. Fincham and H. Baker; *Oxford*, J. E. Jeffries and S. Heaton; *Faversham*, Al. F. DeLaure and F. Pincoff; *Belfast*, J. McDowell and Wesley Forbes; *Winchester*, S. W. Breamore; *Kelvedon*, W. Deal, and W. Cuthbertson; *Bedford*, Zech. Gray.

NEXT YEAR'S SHOW.

In order to assist the Executive Committee in their choice of a place for holding next year's exhibition, a test of the feeling of the general meeting was taken. This was in favour of London, with possibly another exhibition in the provinces. Edinburgh and Doncaster were next in favour, securing an equal number of votes.

EXECUTIVE COMMITTEE.

Chairmen and correspondents of District Committees, also organising secretaries of Trials Committees, have votes on the Executive Committee. As many members declared their inability to attend Committee meetings in London except on special occasions, the following gentlemen were chosen to form an executive sub-committee:—Dr. Masters, Professor Malden, Professor Percival, Messrs. A. Dean, V.M.H., C. Foster, G. Gordon, V.M.H., and Horace J. Wright.

BOARD OF ARBITRATION.

A suggestion was made by Mr. W. Davie that something should be done to avert the disastrous effects of lawsuits on the Potato industry. As an instance of what might be expected from trial by jury in cases requiring the adjudication of experts, he mentioned that in one particular case six of the jury were tailors! This matter was fully discussed, and as a result it was decided to issue with the Annual Report a list of Potato experts, being trade growers and members of the Society, whose services could be sought as arbitrators. The list is as follows:—T. J. Blaydes, Epworth, Doncaster; W. Cuthbertson, Dobbie's Seed Farms, Mark's Tey, Essex; W. Davie, 38, Market Street, Haddington, N.B.; E. J. Deal, W. W. Johnson & Son, Boston; Wm. Deal, Brooklands, Kelvedon, Essex; J. D. Blanshard, Bardney, Lincoln; J. Gardiner, Perth; Zech. Gray, Everton, Sandy, Beds; R. W. Green, Wisbech; E. T. Marsh, 15, Borough High Street, London, S.E.; George Massey, 17, Market Place, Spalding; Jeff. Poad, Fulford, York; T. A. Scarlett, Market Street, Edinburgh; and J. F. Williamson, Summer Hill, Mallow, Ireland.

BIRMINGHAM CHRYSANTHEMUM.

DECEMBER 8.—The annual dinner under the auspices of the Birmingham and Midland Counties Chrysanthemum, Fruit, and Floricultural Society took place at the Colonnade Hotel. Mr. W. L. Latham occupied the chair, and there was a representative attendance. The toast of "The Society" was proposed in fitting terms by Mr. R. A. Felton, who congratulated the Society on the excellence of the recent show. He pointed out that the Cadbury Cup had been won outright by Mr. Whitfield, of Moseley, and if another trophy should be suggested he would be glad to give his support to the fund. The toast, which was heartily honoured, was acknowledged by Mr. Latham, the veteran former Curator of the Edgbaston Botanical Gardens. He stated that he had been connected with the Society for thirty years, and its history had been one of success in almost unbroken continuity. Last year they made a profit of £90, and on this year's show there was a balance in hand of £30. Mr. W. H. Dyer gave the toast of "The Exhibitors," and Mr. A. Cryer replied. The toast of "The Non-Competitive Exhibitors and Special Prize Donors" was proposed by Mr. Thomas Humphreys. He regretted that there were only two non-competitive exhibitors who were amateurs. Mr. Pope and Mr. R. Sydenham replied, the latter reaffirming his interest in the work of the Society, and expressing satisfaction that with each year the prize-list of special donors showed enlargement. He would subscribe to any fund for the purchase of a trophy for the "best group of Chrysanthemums." The other toasts honoured were "Our Visitors," proposed by Mr. W. Spinks and responded to by Messrs. J. Careless and W. H. Morter (the Superintendent of the Birmingham parks); and the "Chairman and Vice-Chairman," given by Mr. W. L. Deedham.

NATIONAL ROSE.

DECEMBER 10.—The annual meeting of the members of the National Rose Society took place at the Hotel Windsor, Westminster, on the above date, and was followed by the annual dinner.

The following are condensed extracts from the Report of the Committee for 1904.

"The Report must be regarded as the most favourable that has yet been placed before the members, for there is not a single branch of the work undertaken by the Society which does not show during the past year a distinct advance.

The metropolitan exhibition, which again took place in the Temple Gardens, was one of the largest and certainly the most varied and interesting the Society has yet held, while the average quality of the exhibits was at the same time exceptionally good. The weather previous to the exhibition was, throughout a great part of the country, very favourable, while the fixture, July 6, proved singularly well-timed, bearing in mind that during June and the early part of July the season was a somewhat backward one. The arrangements connected with the show were, on the whole, very satisfactory. This was in a great measure due to the experienced staff of the Royal Horticultural Society having been again placed at the disposal of the Committee.

Although a provincial show was not held this year in the North of England, no break was allowed to take place in the long series of interesting competitions for the Society's two Jubilee Challenge Trophies, which were, with the consent of the Committee, competed for at the Bath Rose Show on July 11.

It had often been proposed that the Committee should hold an exhibition in September, in order to bring before the public the large number of Roses now in cultivation which bloom freely in the autumn, but not until the present year has this been found practicable. For a first venture, the autumn Rose show, held by the Society in conjunction with the

Royal Horticultural Society, in their new Hall in Vincent Square, in September last, was a great success.

It is with the deepest sorrow that the Committee have to record the sad loss the Society has sustained in the death of their President, the late Dean of Rochester, which took place on August 27 last. Dean Hole presided at that memorable meeting of rosarians in 1876, when the National Rose Society was founded. He was at once elected President, a position he has occupied, with great benefit to the Society, ever since—that is to say, for the last twenty-seven years. The loss of Dean Hole to the Society is in many ways irreparable, for he occupied an altogether unique position in the Rose world as being the great apostle of Rose-culture, so that wherever Roses are mentioned the name of Dean Hole must long remain inseparably connected with them. It is proposed early next year to set on foot a fund in order to establish a suitable memorial to the Society's late President, to which fund many of the members will no doubt be glad to contribute.

The Committee also announce with much regret the recent death of the Rev. A. Foster-Melliar, one of the Society's most valued vice-presidents. He had just completed the revision of a new edition of his *Book of the Rose*, one of the most complete and practical works on Rose-culture, particularly from an exhibitor's point of view, that has yet been written.

The bye-laws and regulations of the Society have year by year received various additions and amendments, but the Committee feel that the time has now come when those additions and amendments should be brought into line, and the whole series overhauled. The constitution, rules, bye-laws, and regulations which will in their place be submitted to the meeting to-day have been drawn up with much thought and care by Mr. C. E. Shea, assisted by a small committee of experts in such matters.

Another sub-committee, which has also been doing good work during the past year, has been that appointed to prepare the Society's new work on pruning Roses. In referring to that sub-committee special mention must be made of the great assistance it has received in its somewhat difficult task from the excellent reports sent in by one of its members—Mr. G. L. Paul.

FINANCE.

The receipts in gate money at the Temple Rose Show exceeded those at the previous exhibition by nearly £100. The receipts from all sources, including a balance from the previous year of £53 7s., amounted to £1,383 19s. 3d., and the expenditure to £1,064 19s. 4d., leaving a balance in the treasurer's hands of £318 19s. 11d. Of that amount it is proposed to set apart £100 for the new reserve fund, and to contribute £25 to the new Horticultural Hall Fund of the Royal Horticultural Society. During the past year 379 new members have joined the Society, or a greater number than in any previous year. In fact, the number of members is at the present time more than double what it was only four years ago. The totals being 584 in 1900, and 1,308 in 1904.

ARRANGEMENTS FOR 1905.

The Committee have entered into arrangements with the Royal Botanic Society of London to hold that exhibition in their gardens in Regent's Park on Thursday, July 6. The Royal Botanic Gardens may not be quite so centrally situated as the Temple Gardens, but in all other respects they are much better adapted for a Rose show. In fact, they may be regarded as forming an ideal spot in which to hold such an exhibition. Added to this, for the first time in the Society's existence, the Committee will have an entirely free hand in all the arrangements connected with their metropolitan show, which cannot but prove a great advantage to both exhibitors and visitors.

The provincial exhibition will be held (on July 18) at Gloucester, in conjunction with the Gloucester Rose Society.

The autumn Rose show will again be held in the Royal Horticultural Hall, in Vincent Square, in conjunction with the Royal Horticultural Society, and next year at a rather later date, viz., Tuesday and Wednesday, September 26 and 27. This exhibition will be rendered even more attractive than the last by the introduction of several new classes in order to illustrate still further the value of the Rose as an autumn flower.

The recommendations of the Committee as to the enactment of new bye-laws, &c., were adopted, and the new Committee was appointed, with Mr. C. E. Shea as President.

NATIONAL SWEET PEA.

DECEMBER 13.—The annual meeting of the National Sweet Pea Society was held at the Hotel Windsor, Westminster, on the above date. In the report of the Executive Committee read by the Secretary, Mr. Horace J. Wright, it was stated that the next exhibition of the Society will take place on July 4, 1905, in the Royal Horticultural Hall, Vincent Square, in conjunction with a meeting of the Committees of the Royal Horticultural Society. An exhaustive audit has

been prepared of the varieties exhibited at the Society's show this year, and this, together with several papers upon matters connected with the Sweet Pea, contributed by members of the Society, will be published under separate cover at the price of 1s. This publication will be known as the *Sweet Pea Annual*. The number of bunches of flowers staged at the exhibition this year was 1,561, against 991 bunches exhibited in 1903. The number of varieties was 107 this year, and 90 in 1903. In the *Sweet Pea Annual* 87 varieties will appear, and the Society does not recommend for cultivation any varieties not included there.

The Chairman, Mr. Whitpain Nutting, having moved the adoption of the report and balance-sheet, Mr. H. J. Jones seconded, and it was carried.

The balance-sheet showed that during the year a sum of £92 10s. 6d. was received from members' subscriptions, being an increase of £20 over the previous year.

Votes of thanks having been passed to the retiring officers, including the President for the year, Mr. Henry Eckford, the election of officers for the coming year was proceeded with. Mr. Percy Waterer was elected President; Mr. C. W. Breadmore, Chairman of Committee; Mr. N. N. Sherwood, Treasurer; and Mr. Horace J. Wright, Secretary. A few alterations were made in the *personnel* of the Committee.

NATIONAL CHRYSANTHEMUM.

DECEMBER 14. Recognising the great importance of the Chrysanthemum as a market flower, this Society inaugurated a special exhibition for this type on the above date in the Essex Hall, Strand. The arrangements of the show were made by a special Committee, and the expenses were defrayed by voluntary subscriptions. No money prizes were offered, but Medals were awarded. The exhibition remained open until 10 P.M., in order that the effect of the flowers could be seen under artificial light. The show was attended with success, and if any fault is to be found it is in regard to the unsuitableness of the building for such a display. Space was limited and the light very defective.

The exhibits of packed boxes of flowers for transit to market were specially interesting, as were also the examples of pot-plants shown by Mr. MILTON HITCHINGS, of Hillingdon. The latter were grown in 60-sized pots, and were perfect "models," being not more than 2 feet or thereabouts in height, and well flowered with blooms of just a suitable size for decorative purposes. This class of pot-plant would be useful in any establishment, and for selling purposes should command good prices and a ready sale. To the grower for market the exhibition should prove interesting and educational, as well as to the private grower who is required to furnish supplies of cut flowers for decorative purposes at this dull season. Single-flowered varieties were almost unrepresented, which to us seems regrettable, as their value for use in decoration is well known, and they can be obtained as late as those of any section.

For a collection of "market" Chrysanthemums, to fill a table space of 12 feet by 12 feet, open to market-growers only, four growers competed. The best collection was set up by Mr. FRANK W. LADDS, The Nurseries, Swanley Junction, Kent, his best varieties being *Mdme. Louise Charvet*, W. R. Rieman, *Tuxedo*, *Mdme. Philippe Rivoire*, *Madame Paolo Radaelli*, Lord Brook, *Matthew Hodgson*, *Mabel Morgan*, *Snowdrift*, *Nagoya*, *Princess Victoria* (white), and *Western King* (Gold Medal). Mr. JOSEPH TULLEY, Rose Nursery, Enfield Highway, was 2nd.

Five growers competed in the class for twelve vases of "market" Chrysanthemums, limited to market-growers only. The schedule required not fewer than six varieties, the vases to contain twelve flowers, which were to be disbudded. Mr. PHILIP LADDS was successful with a fine lot of flowers, including *Madame Louise Charvet*, *Madame Paolo Radaelli*, W. R. Rieman, *Tuxedo*, *Madame Thérèse Panckoucke*, *Negoya*, and *Madame Philippe Rivoire* (Gold Medal). Mr. JOSEPH TULLEY, Rose Nursery, Enfield Highway, was awarded a large Silver Medal for the 2nd prize group.

The best twelve vases of "market" Chrysanthemums, shown in sprays of not fewer than three flowers, was shown by Messrs. G. PRICKETT & SONS, nurserymen, Enfield Highway. *Queen of the Exe* (white), *Putney George* (crimson), *Western King* (white), and W. H. Lincoln (yellow), were his best varieties (Gold Medal).

Only one market salesman, Mr. DAVID INGAMILLS, Covent Garden, contributed to the section for a collection of flowers or sprays to fill a space of 12 by 12 feet. They were an excellent lot, for which the exhibitor was awarded a Gold Medal. The variety *Mrs. Joseph Thompson* was shown well, as were also *King of Plumes* (a crested "yellow"), *Yellow Princess Victoria*, *Cullingfordi*, *Lady T. Lawrence*, &c.

An interesting class was that for two boxes of Chrysanthemums as packed for market, and containing in the one box bunches and in the other individual flowers of Chrysanthemums. There were two classes for this competition, one open to market salesmen only and the other open to all, Messrs. LADDS winning in the former, and Messrs. CRAGG, HARRISON & CRAGG,

nurserymen, Heston, Middlesex, in the latter. The boxes were about 3 feet 6 inches by 2 feet in area, and of a suitable depth. The flowers were packed in rows, with a Hazel stick running across the box beneath the heads, and holding them in position. A roll of tissue-paper was *in situ* beneath the upper petals. This was repeated from either end of the box, the foliage and stems being worked among the flowers, giving a solid character to the whole contents.

SINGLE VASES.

The best yellow variety in a single vase was "*Rieman*," staged by Messrs. B. SHEARN & SON, 42, Bedford Square, W.C. The best "bronze" in a similar class was the variety *Tuxedo*, shown by Messrs. LADDS.

Mr. INGAMILLS showed the best vase of a white variety in *Mdme. Thérèse Panckoucke*. The same grower also staged the best vase of a pink variety in *Framfield Pink*, syn. *Madame Felix Perrin*.

Messrs. B. SHEARN & SON, Bedford Square, contributed the best vase of a crimson variety, having the variety *Lady Violet Beaumont* in good form.

As mentioned above, Mr. MILTON HITCHINGS, Nurseryman, Hillingdon, Uxbridge, Middlesex, staged decorative pot-plants, excellently grown. With six specimens he was awarded the highest honours in Class 12, having the varieties A. J. Balfour (pink), W. H. Lincoln (yellow), and Guv Hamilton (white).

The best novelty not in commerce prior to 1903 was "*Golden Standard*," which was awarded the Society's Certificate at the recent show at the Crystal Palace. Shown by Mr. C. E. TURNER, Hale, near Liverpool, and for which he was awarded the Society's Silver-gilt Medal.

GARDENERS' DEBATING SOCIETIES.

CHELMSFORD AND DISTRICT GARDENERS'.—At the weekly meeting on Friday, December 9, Mr. Wakeley read a paper on "*Flowering Plants for Conservatory use in early winter*." F. A. Wells, Esq., Vice-President presided. Owing to the inclemency of the weather only fifty-three members were present. The speaker gave an interesting and instructive address, dealing briefly with some two dozen or more plants serviceable at this period of the year. In the discussion that followed, the importance of "ventilation" and the "careful watering of plants" was especially emphasised.

DEVON AND EXETER GARDENERS'.—At a recent meeting of this Society, Mr. Vallance, of the Bristol Gardeners' Association, gave an admirable lecture on "*The Restoration of Vines*." He said the prevailing desire of young gardeners was to clear out old vines and start afresh with young canes, but in the majority of cases this was neither necessary nor desirable. Restoration was preferable, Mr. Vallance advised, for making young rods, stopping the young shoot when it was about a third the available distance up the trellis, and in the winter pruning off the old spurs for that distance. The next year they should repeat the process for another third of the distance, and in the third year continue the renewal to the top, afterwards cutting out the old wood and leaving practically a new vine in its place. An absolute essential to successful vine-culture was that the roots should be in good condition and the soil in which they were feeding well drained. J. H.

CROYDON AND DISTRICT. —On Tuesday, December 6, Mr. G. Dray, Sydenham, S.E., delivered a lecture on the "*United Horticultural Benefit and Provident Society*." This Society was formed some forty years ago, to render assistance to gardeners in private, nursery, and market gardens, and to seed-warhousemen. The lecturer appealed especially to his younger hearers for their consideration of the benefits obtained by joining such a Society, recommending them to join, and so ensure to themselves the many advantages offered. The subject was fully dealt with by the lecturer, and great interest was evoked by his remarks.

EGHAM AND DISTRICT GARDENERS'.—A meeting of the above Society was held on the 7th inst., when a paper on "*The Curmation*" was read by Mr. B. Nash, Hoe Place, Old Woking. The essayist spoke exclusively of the border and show varieties, explaining in detail the various soils and manures he had found suitable for successful cultivation, and giving advice upon the best means of destroying fungoid pests. An interesting discussion followed, in which it was discussed why the colour varies in some varieties, also upon the dressing of flowers for exhibition. The present mode of showing flowers on paper collars was strongly condemned by some of the members, but was defended by the essayist, who reminded his audience that in manipulating flowers for exhibition they always took away from the flowers, but never added to them.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—This Society held their fortnightly meeting on December 6, Mr. W. P. Bound in the chair. A paper was given on "*Wall Fruit*," by Mr. Moffet, of The Gardens, Nutfield Priory. Peaches and Nectarines were the fruits principally dealt with. Mr. Moffet advised growers to select their own trees. The proper manner of planting was fully explained. The lecturer strongly recommended the roots to be encouraged near the surface of the ground, to enable the cultivator to keep the trees better under control, it would also obviate the laborious task of root-pruning and lifting. Dusting the trees with sulphur in the early season was advocated; this practice materially assisted in keeping the plants free from insect pest, and also acted as a preventive to the blister disease. Pruning, stopping, manuring, syringing and protecting the trees during severe weather were all dealt with in the lecture.

TRADE NOTICE.

We are informed that Messrs. John Peed & Son have taken new nursery ground at Morden Park, Surrey, for the growing of fruit-trees, Roses, and forest trees. Their addresses will therefore be Roupell Park Nurseries, West Norwood, S.E., Streatham Park Nurseries, Streatham, S.W., and Morden Park Nurseries, Morden, Surrey.

ANSWERS TO CORRESPONDENTS.

BOOKS: *Subscriber.* Cucumber - culture for Amateurs, by W. J. May, obtainable from our Publishing Department, price 1s. 2d. post free.

COKE: W. C. L. A bushel of coke should contain exactly one-third of a hundredweight, or 37½ lb.

CORRECTION.—For *Barberia flava*, on p. 399, col. 3, read *Barleria flava*.

CUCUMBER LEAF-SPOT AND TOMATO DISEASE: J. V. writes:—"Will you permit me to ask Mr. Massee, through the *Gardeners' Chronicle*, what steps he would take in growing Tomatoes to prevent fungous and insect attacks? Bearing in mind the words of Prof. Sorauer—"to keep a plant in health is to prevent the access of disease"—(quoted by 'H. G.,' *Gardeners' Chronicle*, November 5, 1904), I have tried to learn, but do not get beyond a recommendation from Messrs. Campbell, of Water Street, Manchester, to burn sulphur every three weeks (I presume from the first, when the plants are 4 or 5 inches high), and the recommendation in the aforesaid article (which may not be of universal application) to syringe with a solution of copper sulphate in the proportion of 1 lb. of copper sulphate to 20 gallons of water—at what length of interval is not stated. I think many Tomato-growers would stop at no trouble if they clearly understood what they should do to make the best fight possible against disease."

ANSWER.

In our issue for September 5, 1903, appeared a note by Mr. George Massee, which we now reproduce for the benefit of our correspondent and others who are placed similarly:—"There is only one cause, that is a minute parasitic fungus called *Cercospora melonis*, of Cooke. Plants can be safeguarded from it by avoiding "soft foliage," caused by the presence of too much moisture in the atmosphere, too free use of manure, and deficiency of ventilation. The latter is important, even if extra heat is required to maintain the required temperature. Spray every portion of earth in the house with Bordeaux-mixture once a week from the first, even if there is no evidence of the disease. With persistent attention the disease can be stamped out; or, better, it can be prevented from appearing by spraying with sulphide of potassium, 2 oz. in 3 gallons of water, in which 2 oz. of soft-soap is dissolved. Infection can only take place on the under-surface of the leaf, hence this portion should be thoroughly covered with the solution. Use this solution every other day instead of water that is used for syringing, the spraying taking the place of syringing. The solution will not injure the fruit. The disease cannot be introduced with the seed. The spores are spread by wind, tools, clothing, insects, &c. Empty the house, and drench every part inside with Bordeaux-mixture. Add gas-lime to the soil, and mix thoroughly at least two months before it is placed in the house." Red-spider is the only insect pest, other than eel-worms, that causes much injury to Cucumbers. The syringe is the best means to employ against this pest, supplemented by occasional "vapourings" with Campbell's Vaporiser.

CYCLAMEN FLOWERS: A. C. The flowers present what is known as the "crested" form, due to excessive growth. A series of crested flowers have been illustrated in the *Gardeners' Chronicle*. See our issue for May 22, 1897, p. 331.

GRAPES DISEASED: J. H. W. Your Grapes were attacked at an early period by the "Spot"

Fungus (*Gloeosporium*), and the stalks are also badly "shanked." You can do nothing this year except burn the diseased fruits. Take steps to ensure that the roots shall be in a satisfactory condition. Dust the young growths upon the canes in the spring with flowers-of-sulphur. It has been found of service to thoroughly wet the branches with a solution of sulphate of iron when the Vine is resting.

GRUB: *Correspondent.* The Devil's Coach-horse (*Ocyrops olens*).

LITHOSPERMUM: A. C. T. The change in colour is due to some chemical alteration in the flower.

NAMES OF FRUITS: W. B. L. 1, Royal Russet; 2, King of the Pippins; 3, Northern Spy; 4, Sturmer Pippin; 5, Fearn's Pippin; 6, Pine Golden Pippin.—W. F. J. 1, Stirling Castle; 2, Bramley's Seedling; 3, Lady Henniker; 4, Norfolk Beefing.—E. Fieler. Wormsley Pippin.—J. Goatley. 1, Annie Elizabeth; 2, Alfriston; 3, Cockle's Pippin; 4, Warwick Pippin; 5, Royal George; 6, Pitmaston Pine.—G. H. Head. 1, Kentish Deux Ans; 2, Northern Greening; 3, Magnum Bonum; 4, not recognised; 5, Dumelow's Seedling (Wellington); 6, Scarlet Golden Pippin; Pear was decayed.—W. H. S. 1, Pile's Russet; 2, Grange's Pearmain; 3, Reinette du Caux; 4, Acklam Russet; 5, Lord Lennox; 6, Sturmer Pippin.—John Ackers. Apple Benoni.

NAMES OF PLANTS: J. C. *Adiantum Farleyense*.—W. H. C. 1, *Primula sinensis*; 2, send in flower.—J. D. 1, *Cypripedium (Selenipedum) Lindleyanum*. It can scarcely be a seedling hybrid; 2, *Cypripedium* × *Calypso*; 3, C. insigne.—E. A. E. 1, *Catasetum macrocarpum*; 2, *Dendrobium Kingianum*; 3, *D. speciosum*.—J. T. *Laurus canariensis*.—E. S. Probably *Rhus glabra* var. *laciniata*; send again when in flower.

ROSES: *Rosa*. If you have not tried Roses on their own roots we would advise you to obtain plants which have been budded. It is possible that Roses on their own roots might prove to be unsatisfactory, but a few might be tried elsewhere in your garden, selecting such varieties as Marie Baumann, Prince Camille de Rohan, Caroline Testout, Maman Cochet, Madame Lambard, Innocenti Pirola, and varieties that you have noticed as succeeding in your neighbourhood. Six good Hybrid Perpetual Roses for the beds would be Mrs. John Laing, Ulrich Brunner, Prince Camille de Rohan, Baroness Rothschild, and Duke of Edinburgh. The Hybrid Tea varieties, Mrs. W. J. Grant, Kaiserin Augusta Victoria, Caroline Testout, Merveille de Lyon, La France, and Marquise Litta. Six Tea Roses, Madame Lambard, Maman Cochet, Hon. Edith Gifford, Catherine Mermet, Marie Van Houtte, and Anna Olivier. You state that you have worked a load of river-mud into your soil; but this should have been stacked up for twelve months before use to sweeten and become pulverised. Cow-manure would have been better.

PLANTS FOR A NORTH BORDER: *North Pole*. It would have been of material assistance had you given the width of the border, and you will realise that the most suitable plants for a border 12 feet wide would be out of place in one 3 feet wide. As it is a "long border" we will assume a certain degree of proportion in respect to its width. For April, May, and June there is a great wealth of suitable plants, and we mention among those for April a selection of *Narcissus* to include Emperor, Sir Watkin, Empress, Grandis, Golden Spur, Barri conspicuus, Ornatus, Mme. de Graaff, Poeticus poetarum, Frank Miles, Leeds (type), Maximus, Autocrat, &c.; *Tulipa Gesneriana* in variety, of which Bridesmaid, Aurantiaca, Rosalind, and spatulata, are a selection; *T. macrosepa*, *T. suaveolens*, *T. sylvestris*, &c., are very beautiful for flowering early in May. Other bulbous things for spring are *Muscari conicum*, *Fritillaria Meleagris*, *F. imperialis*, with Spanish and English Irises later in abundance. In each of the groups named there is much variety, so that numbers of the sorts may be planted, or a greater number of varieties. With the single exception of *Fritillaria imperialis*, which is 3 feet high,

all the rest are under 2 feet in height. Dwarfier subjects are *Anemones*, *Ranunculus* in variety, with a bordering of *Phlox setacea* in variety, or double white *Arabis* or *Aubrietias*. The bulbous plants should be planted at once. Of herbaceous perennial-flowering plants, select *Doronicums*, *Cheiranthus alpinus*, *Aster alpinus superbus*, *Anemone sylvestris*, *Arnebia echioides*, *Senecio Doronicum*, *Heucheras*, *Anthericum*, *Incarvillea Delavayi*, *Oriental Poppies*, *Armerias*, *Centaurea montana rubra*, *Gentiana acaulis* (very suitable for edging), *Geums*, *Inula glandulosa*, *Primula cashmeriana*, *P. Sieboldi* in variety, *P. rosea*, *Iberis*, *Lychnis*, *Viscaria rubra-plena*, *Polemonium Richardsoni*, the *Megaseas*, *Saxifraga Rhei superba*, S. Guildford Seedling, *S. granulata plena*, and any of the *Trollius*. All the plants enumerated are valuable for flowering in the spring and early summer months. To these should be added *Paeonia officinalis*, and a selection of varieties of single and double-flowered *Pyrethrus* and *Flag Irises*, which space will not permit us to enumerate in detail. *Paeonia sinensis* would scarcely be in flower on a north border at the time you name, but they would make a grand show a little later. For the autumn display you must rely on the best of the *Michaelmas Daisies (Asters)*, as *Arc-turus*, *densus*, *cordifolius*, *turbinellus*, *grandiflorus*, *Ariadne*, and others; *Kniphofia aloides grandiflora*, *K. nobilis*, &c.; any of the *Cimicifugas*, *Stenactis speciosus*, *Aconitum Wilsoni*, *Bocconias* for the effect produced by their foliage, *Polygonum Brunonis*, *P. amplexicaule*, *Pyrethrum serotinum*, *Rudbeckias*, *Colchicums*, *Sedum spectabile*, *Senecio pulcher*, *Astilbe Davidii*, *Physalis Francheti*, &c. If the width of border will admit, *Roses* on rustic poles could be planted, provided the position is not much shaded. As many bulbous plants have been included in the selection, we advise you to plant the entire border with as little delay as possible. A system of grouping the sorts together will furnish the best results, associating as far as possible the *Narcissus* and bulbous Irises with the dwarfier herbaceous plants, and so bring into being a sort of *multum in parvo* arrangement, whereby two plants flowering at different periods may be almost said to occupy one position.

PLANTS FOR SANDSTONE WALLS: *Constant Reader*. The following are suitable species:—**Tunica saxifraga*, **Saponaria ocyroides*, *Arenarias*, *Armeria alpina*, *Cheiranthus alpinus*, **Erysimum helveticum*, **Corydalis lutea*, *Zauschnerias*, many *Sedums*, particularly *S. oppositifolium*, *S. acre*, *S. spurium*, &c.; any of the encrusted *Saxifragas*, as *S. aizoon*, *S. rosularis*, *S. pectinata*, *S. Hostii*, *S. longifolia*; *Sempervivum arachnoideum*, **Aquilegia corulea*, **A. alpina*, **A. glandulosa*, **Alyssum saxatile*, **Myosotis alpestris* (if in shade), **Honesty*, *Umbilicus chrysanthus*, **Antirrhinum*, *Linaria alpina*, *Achillea umbellata*, *Campanula pumila*, *C. muralis*, *C. garganica*, many of the Alpine Pinks or **Dianthus*, **Lychnis Lagascea*, *Helianthemum*, *Linaria cymbalaria*, **Centranthus ruber*, **Erinus alpinus*, and many more. Those marked by an asterisk may be raised from seeds, and if the seeds be mixed with a little soil moistened to a paste they can readily be introduced into the crevices of the wall; but take care not to insert them too deeply. When introducing living plants to the walls remember that small bits with roots attached are best, placing several near to each other, so that they will subsequently form a group. Care must be exercised afterwards to ascertain that none of the plants suffer from lack of moisture at the roots, or many will die owing to the rains failing to reach them.

POTATO DUKE OF YORK: H. G. F. We cannot undertake to name varieties of Potatoes from tubers only.

COMMUNICATIONS RECEIVED.—F. Smith, many thanks (a note was published in our last issue).—C. P. Radfill.—J. C. T.—J. G. W., Kilkenny—G. W.—C. M.—A. H. W.—G. H. H. W.—J. D.—E. H. J.—W. H. G.—Geo. Bunyard.—H. W. W.—K.—Expert—W. H. A.—A. J.—K. H.—Tokyo, Japan—W. W. P.—W. Honess—Excelsior—J. K. B.—W. E. H.—W. H.—J. S.—B. J. H.—Dr. de Wildeman, Brussels—J. H. J. B.—H. J. V.

(For Markets and Weather, see p. viii.)



VIEWS IN THE FERNERY IN THE BOTANIC GARDENS, BELFAST.

From Photographs supplied by Mr. R. Welch.



THE Gardeners' Chronicle

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View in the Arnold Arboretum, U.S.A. (Supplementary Illustration)	

PEARS FOR CHRISTMAS AND AFTER.

LATE varieties of Pears have always greatly interested me, and I hope that a few remarks upon the subject may be acceptable to my brother gardeners who possibly may not have the same opportunity as I have of testing new varieties. I have heard very frequently that late Pears as a rule are poor in flavour. Take, for instance, the variety Easter Beurré, the fruits of which, when properly grown, will keep very well into February; but if they are not thinned out severely and the roots deluged with water, they will be of small size and not worth eating. This applies in more or less degree to all late Pears. I know well that locality, aspect, and soil exercise a great influence upon the finish of late fruits. As regards aspect, I have found a west wall better for the production of fruits of high flavour than walls having a south aspect. This fact shows how in the late autumn the afternoon sun is beneficial to the ripening fruits, for on a south aspect the sun is off them much earlier in the day. Of soils I have found a rather light and very rich compost the best; but only just sufficient drainage material to carry away superfluous moisture should be employed. I planted 100 cordons against a wall many years ago, but not one of them grew satisfactorily, and I could not for a long time account for this, but at last I came to the

conclusion that there was too much lime in the soil. I had the whole of these cordons, which were "worked" on Quince stocks, lifted, and the soil removed. Then the trees were replanted in soil obtained from the kitchen-garden. The result surpassed my expectations, for not only did the trees grow well in the first year, but they have continued to produce splendid crops annually. Thus I have come to the conclusion that Pears on the Quince stock do not flourish where there is much lime at the roots.

It is often a surprise to me to find that one variety that has succeeded well one season may be a failure in the succeeding year. I have had an instance of this this year. Doyenné d'Alençon and Nouvelle Fulvie, both of which were of rather poor

BEURRÉ PERRAN.—This has not cropped with me as yet, but I have tasted fruits elsewhere, and they were superb.

BEURRÉ RANCE.—One of our very best Pears, of poor appearance certainly, but possessing excellent flavour. The tree is a strong grower, and needs root-pruning frequently to induce fruitfulness.

DOYENNÉ D'ALENÇON.—This is excellent in some seasons, but requires to be severely thinned, or the fruits fail to mature perfectly.

DUCHESSE DE BORDEAUX (see fig. 187).—A very useful Pear that requires a great deal of feeding in order to perfect its fruits.

GLOUT MORCEAU.—This is one of the very easiest varieties to cultivate. I have seen



FIG. 187.—PEAR DUCHESSE DE BORDEAUX.

flavour last season, are this year exceptionally good, although exactly the same treatment was given them.

The following varieties I consider to be amongst the best for dessert at Christmas or later, but, as most gardeners know, it is only by experience than one can decide which are the best for his particular district:—

BERGAMOT ESPEREN (see fig. 188) requires to be thinned very severely, but it is really a splendid Pear when finished, as were the fruits I have tasted from Cornwall.

BEURRÉ JONGHE.—The fruits are of medium size, excellent flavour, and it is a most desirable kind.

BEURRÉ EASTER.—A useful variety when the fruits are thinned freely and plenty of nourishment is afforded the trees.

BEURRÉ DUBISSON is of grand flavour but the trees grow very slowly.

trees grafted on Pear stocks growing against a west wall carrying excellent crops. The fruits are of very good flavour.

JOSEPHINE DE MALINES.—The fruits are rather small in size for exhibition, but quite large enough for dessert purposes. Those fruits having salmon-coloured flesh, like that of Conference and Josephine de Malines, are always the best flavoured. Probably others have noticed that the flesh of some varieties is much lighter in colour than that of others.

KNIGHT'S MONARCH.—Fruits of this variety are excellent when one can get them to stay on the tree long enough, but they drop here long before they are mature.

LE LECTIER.—This is really first-class here. The tree is a good grower, and although the fruits are green when gathered, they soon become a lovely straw-

colour. I have no hesitation in recommending this variety for flavour, and the flesh is as melting as that of Doyenné du Comice and as free from grittiness.

NOUVELLE FULVIE is another delicious Pear. Though of poor appearance, with me the fruits are really splendid in quality. The defect of roughness will be overlooked when the fruit has been once tasted.

OLIVIER DE SERRES is a useful Pear but very gritty.

PASSE CRASSANE.—When well grown this variety is certainly a Christmas Doyenné du Comice. It needs a great deal of attention and culture to bring it to perfection, but I have shown fruits of this variety weighing upwards of 14 oz. each, and have kept them good until February in some seasons.

WINTER NELIS.—The fruits are rather small in size, but the tree is a good cropper, and the fruits are of excellent flavour.

preferred, as being most profitable for fruit-production. There are, however, certain varieties, especially Triomphe de Jodoigne, Bergamot Crassane, Saint Germain d'Hiver, and Bon Chrétien d'Hiver, that only fruit well against walls or fencing having a sunny aspect. The best dessert Pears are always the good old varieties. Progress has not added much to their quality, although the number may have increased. The following varieties are still the highest esteemed: Williams' Bon Chrétien, Louise Bonne d'Avranches, Beurré d'Angleterre, Beurré Hardy, Duchesse d'Angoulême, Doyenné Blanc, Doyenné du Comice, Docteur Jules Guyot, Beurré de l'Assomption, Doyenné d'Hiver, Williams d'Hiver, Passe Crassane, Olivier des Serres, La France, Belle Aurore, and Josephine de Malines, whose flavour resembles the odour of a perfumed Rose.

The principal varieties seen in the Paris markets and on all good tables in November were those that follow:—Beurré d'Anjou (see fig. 190), Beurré Clairgeau (see fig. 189), Beurré Diel, Beurré Fouqueray, Chaumontel, Dubreuil Père,

Seedling, recommended for north aspects and cold climates. The Canada, Egrain, Carisi, and Boivin species make excellent cider or poiret (perry), being very juicy.

The Triomphe de Vienne is one of the largest Pears known, and is of good quality, but it is surpassed in size by the Belle Angevine, good neither for eating nor cooking, and only used, together with a few other half-wild and inferior kinds, sour and bitter, for making a kind of fermented drink much relished by French peasants. They also make jam, called "cotignac," with Pears stewed down in red wine; and in the south of France one of the principal occupations at a certain time of the year is the preparation of crystallized Pears, made by drying and preserving them in sugar. *F., Paris.*

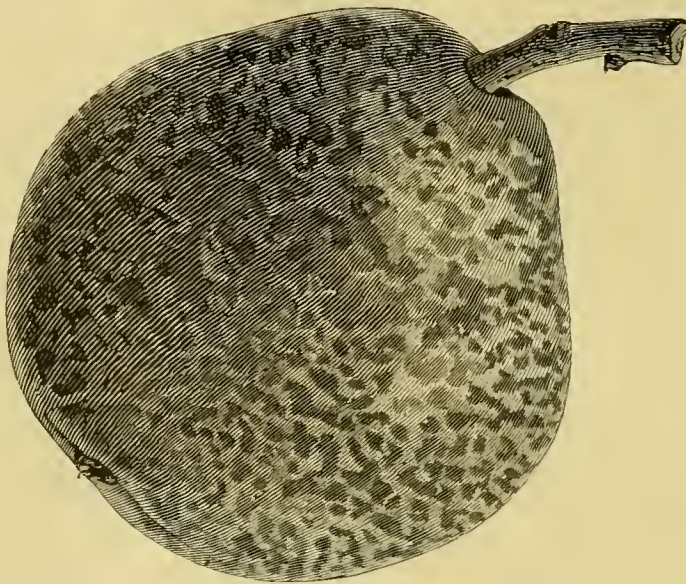


FIG. 188.—PEAR BERGAMOT ESPEREN.

There are other varieties named in the various fruit catalogues, but as I have not tried them I may be excused from giving an opinion upon their merits. *George Woodward, Barham Court Estate Gardens, Maidstone.*

FOREIGN CORRESPONDENCE.

PEARS IN FRANCE.

PEARS are cultivated very widely in France. In nearly all the large forests the Pear may be found in its wild state, with crooked trunk, rough bark, branches of dark-red wood, and thorny shoots. The fruit is small, hard and bitter, but here and there may be found a variety which is eatable. Pears are improved wonderfully by cultivation; they are propagated by grafting, budding, and layering. As each fruit contains generally ten "pips" (seeds), some cultivators still continue to propagate by sowing, but seedling varieties are usually very inferior, and the fruits are only used to make a kind of cheap jam. These seedlings are used principally for grafting the finer varieties upon, although the Quince is more frequently used for this purpose.

The pyramidal form of training is generally

Van Mons, Verte Longue Suisse, Beurré d'Aremberg, Colmar d'Aremberg, Bergamot Liabaud, Crassane, Sœur Grégoire, Pitmaston Duchess. Among newer varieties may be cited Alexandre III., Avocat Tonnellier, Conference, Comtesse de Paris, Cavalier de la Salle, Doyenné Madame Th. Levavasseur, Eva Baltet, Le Lectier, Marguerite Marillat, Souvenir du Président Carnot. There are also four other new varieties which are highly recommended by Messrs. Levavasseur & Sons, of Orleans, viz., Alliance Franco-Russe, Jeanne d'Arc, Directeur Varenne, and Souvenir de Jules Guindon, which will probably in time be widely appreciated.

We must not forget to mention the earliest of all the Pears, Citron des Carmes, ripe in July and even in June, very prolific, although the fruit is small. Mademoiselle Solange is also a very early variety. Messire Jean, Beurré Capiaumont, Catillac, Martin Sec, are amongst the best cooking Pears.

For orchards, where the trees may have full liberty of growth, the following varieties are preferred, amongst others, on account of their fertility and easy growth, Beurré d'Amanlis, Bergamot Esperen, Rousselet, Doyenné Doré.

The Japanese varieties are becoming more widely cultivated, especially Mikado, Idaho, and Kieffer



FIG. 189.—PEAR BEURRÉ CLAIRGEAU.
(From a photograph supplied by Mr. Jas. E. Tyler, Halstead.)

CUCUMBER DISEASE, OR "SPOT."

I HAVE had opportunities of visiting a number of gardens where the Cucumber is extensively grown for sale, and have been appalled at witnessing the fearful ravages committed by this disease amongst Cucumber-plants, the contents of whole houses of great extent being attacked and destroyed in the course of a very short time, resulting in enormous loss to many growers, and to some, I am afraid, absolute ruin. If a remedy or a preventive is not soon found, the growth of the Cucumber on a large scale in England is evidently a doomed industry. I know one large grower who has given up their growth in despair through losses from this disease. Another told me he lost £1,000 in 1903 from the same cause. My object in drawing attention to the subject is in the hope that some of the many readers of the *Gardeners' Chronicle*, scientific and practical, may be able to come to the rescue by suggesting an effective way of combatting this terrible disease.

I have grown Cucumbers on a limited scale, it is true, as compared to the extent they are now

grown in market gardens, and never was troubled with anything of this sort. As a Cucumber disease I believe its attack is comparatively new, having been noticed for the first time only about six years ago. How it originated no one seems to know. I was inclined to think that its origin may have been caused by the general conditions under which Cucumber culture had been carried out being more or less faulty—such as the soil being sour, the manure too rank, and the drainage faulty; or that a chill had been received by the application of water too cold, or possibly by injudicious ventilation by the admittance of too much cold air when the wind was in the east or north. But these impressions were proven to be beside the mark by the experience of a gentleman of my acquaintance who commenced growing Cucumbers for market on a large scale this year in an entirely new garden, with new houses, virgin soil, well-drained borders, and situated in a district miles away from any other place where Cucumbers were grown. The plants under notice were immune from the disease until about the middle of August, when a spot or two appeared on a few of the leaves in a house 150 feet by 24 feet. In the course of a fortnight or three weeks the disease had spread through the house, and in less than a month afterwards the whole of the crop was practically destroyed.

Another house of plants was attacked shortly afterwards in the same way, and suffered the same consequence. Fortunately in this case the plants had borne good crops before being attacked, and the loss was not so great. Experience, I believe, has proved that once this pest has established itself in a garden, that it makes its appearance every year afterwards at a much earlier date, rendering it practically impossible to grow remunerative crops in a garden affected. The disease attacks the plant at all stages of its growth—sometimes young plants with only two or three leaves are affected. It first shows itself as a round, shiny, small spot, and afterwards turns to the colour of a brown wart. The spots multiply rapidly, shortly spreading through all the leaves, causing them soon to wither and decay. On examining the roots of these plants they appeared to be perfectly healthy and free from the disease.

I have been face to face with many a serious attack of fungoid disease of one sort or another, both on fruit-trees and plants, and have never failed in arresting their progress and destroying them by the application of remedies the foundation of which were flowers-of-sulphur and lime. On my recommendation the gentleman applied these remedies to his diseased Cucumbers, with the result that the ravages of the pest were checked for a short time, but afterwards it pursued its destructive course as bad as ever.

In the *Journal of the Royal Horticultural Society*, vol. xxviii., Parts 1 and 2, is an article by Mr. Geo. Massee, V.M.H., entitled "To Protect Cucumbers and Tomatoes from Fungus," where an account is given of this disease, detailing some interesting experiments carried out at the Royal Gardens, Kew, with a view of finding out a prevention and a remedy to this much dreaded disease, from which I take the following:—

"PRACTICAL DIRECTIONS FOR TREATMENT."

Commence watering Cucumbers and Tomatoes when a fortnight old every third day with a solution consisting of 1 oz. of sulphate of copper dissolved in 50 gallons of water. After treating for six weeks as above, commence watering every fourth day with a solution containing 1 oz. of sulphate of copper in 35 gallons of water. The sulphate of copper should be pure, and rain-water should be used if possible."

I hope the Editor or some of the numerous correspondents of the *Gardeners' Chronicle* will be able to help growers to rid themselves of this virulent and fatal disease. *Owen Thomas*. [A full description of the fungus was given in our columns, October 4, 1902, p. 241. Ed.]

VANILLA CULTIVATION.

SOME curious facts have recently come to hand regarding the Vanilla cultivation in Tahiti and Mauritius. The exports from Tahiti to the United States have been declining, apparently from the inferiority of the product. The small trade that now exists seems to be generally in the hands of Chinamen, who encourage trade with the natives by accepting options on the Vanilla output, and ultimately receive the beans in the crudest form and proceed to cure them. The name Tahiti, as applied to Vanilla, is said to be sufficient to condemn the exports from the

Vanilla-pods and mix them with sound ones. It is stated, however, that there are a few companies of native planters who are trying to put a high-grade Vanilla on the market.

With regard to Mauritius, a better tone accompanies the information on the cultivation of the plant in that island, where, it is stated, a committee was recently appointed to make recommendations for amending the laws relating to Vanilla. The following notes are gathered from the report of this Committee: That Vanilla grows luxuriantly in Mauritius and constitutes an important source of revenue. There is practically no disease on fully-grown plants, and the



FIG. 190.—PEAR BEURRÉ D'ANJOU.

(From a photograph supplied by Mr. Jas. E. Tyler, Halsestead.)

colony, and the American Consul has endeavoured to enlist the interest of the officials in a plan for compulsory inspection and grading under the control of the Government. The matter, however, has not been looked upon favourably by the officials, though it has by many planters and merchants. The Consul therefore warns importers of Vanilla from Tahiti carefully to examine any beans that they have reason to suspect of being cured by Chinese, as these traders are accustomed to pick up beans that have been rejected by others as totally unfit for market, soak them in salt water or let them remain for a time in coconut-oil, and then pack them in the bottoms of tins containing better grades. Chinamen will buy even mouldy

failures in certain plantations are mostly due to bad cultivation. There are some 3,000 Vanilla planters in the island, but the majority of these are small proprietors who have a few plants in their gardens or orchards. The exports of prepared Vanilla in 1902 amounted to 7,712 lb., and the cultivation is capable of considerable extension. In spite of care taken to save the pods, they are subject to the depredations of thieves, whom, owing to the nature of the product, it is very difficult to detect. With the view, therefore, of protecting the planters, it is recommended that stringent regulations be made for the licensing of all sellers and purchasers of Vanilla, the affixing of a special mark by growers on their green pods, and the giving of notice to the

authorities before Vanilla is gathered. It was also recommended that a special inspector be appointed for the purpose of reporting on all Vanilla plantations, preparing houses, &c.

In the Seychelles the Vanilla cultivation has for some time been very successful, and large quantities have been offered for sale in the London market, mostly realising good prices. At the first auction of the year, on January 13, the quantity of Vanilla offered was so large that the sale was not completed till late on the following day (the 14th). As many as 2,800 tins were put up for sale, the total weight of which was about 15½ tons, and constituted a record bulk, the chief portion being from the Seychelles. Nearly the whole of this quantity was sold during the two days at fairly good prices, fine quality realising from 12s. to 15s. 6d. per lb.

It is worthy of note in connection with the foregoing remarks that the fear expressed some years back, that the synthetic production of vanillin would ruin the Vanilla culture, has not yet been fulfilled. The numerous and increasing uses of Vanilla for flavouring purposes in chocolates and other kinds of confectionery are accountable to a large extent for the present very large consumption of Vanilla. *John R. Jackson, Claremont, Lympstone, Devon.*

VEGETABLES.

THE EARLIEST OF NEW PEAS.

In many gardens early Peas are much sought after, and various means are adopted to secure a crop. In our own case we grow some in pots and others in frames; but our best crops are secured from seeds sown in pots in December and planted out early in March. I consider this to be one of the best systems of culture, and it is suitable on heavy soils or late localities where autumn-sown seeds would not be a success. The old plan of sowing in the open ground in November or December does not commend itself to many; it is by no means profitable, and even when the plants have come up well and appear thriving, they generally suffer badly later on from excessive rainfall or late frosts. All gardeners may not have the glass necessary to forward a crop; but even then I should not advise autumn sowing, but would prepare the land specially, and sow a very early variety in February or early in March, and hasten the crop by timely shelter. This can be done by protecting the plants when very young; and growth is much earlier when the land is well drained than it would be otherwise.

My remarks more concern culture at the start under glass, and for this purpose special dwarf-growing varieties are required, but not necessarily the small-podded round Peas of poor flavour. In place of such old varieties we have some splendid early sorts that exhibit very great improvements. I have referred to forcing Peas, and of course most kinds will force, but some are much more suitable than others. For pot culture I have found Carter's Forcing Pea very reliable. It is a marrowfat Pea, very sturdy in growth, and rarely exceeds 1 foot in height. It is an excellent Pea for culture under glass. This variety sown in 7 or 8-inch pots gives a good return; and it is an excellent "frame" Pea, if the seeds be sown in the frames, and the soil raised until about 18 inches from the glass. The seeds should be sown in December, there will then be a crop of Peas in April. Such small-growing Peas can be grown thickly, so that the plants nearly touch each other. They are equally useful when cultivated in pots; if the seeds are sown now, and started in a fruit-house, they will give a good return. It frequently happens that there is room for a few dozen pots in Peach-houses or on shelves. Such Peas can be grown also in cold frames grandly. I have sown seeds in small pots early in December,

and planted out the young plants at the end of January into the cold frames. Of course the plants may be grown in frames from the start, but it is not always possible to have the frames to spare; in my own case they are now occupied by salads.

Another very early Pea, and quite as good as Carter's Forcing, is Carter's Eight-weeks. This was sent me for trial a season ago, and it is well named, for it is the earliest variety I have grown. The plants are a little taller than those of Carter's Forcing, and are not unlike the older American Wonder, which was one of the parents. But it is an earlier Pea, and has larger pods of splendid quality. For many years William the First was a great favourite, and the Eight-weeks claims this old variety as one of its parents. It is a decided acquisition for pot or frame culture, and invaluable for a first crop in the open. Of other varieties the Mayflower, a marrowfat Pea, is a splendid forcer—William Hurst and Daisy are the parents, and it is a great favourite with me. I know of no better variety for sowing in pots and planting-out. Grown thus it gives a very full crop; its height is under 18 inches; the pods are large for an early Pea, having strong, stately bine, which is very valuable in forced plants, as I find such Peas are better able to battle against our variable climate than those with small thin haulms, which soon double over in cold weather, and rarely recover.

There are older kinds, such as Early Morn and Springtide, but these are better known, and I need not dwell upon their merits; but I would briefly note the value of sowing now in 5 or 6-inch pots in good loam not too heavy. We use burnt wood ashes freely, and very little drainage, placing the pots in cold frames. No heat is given at all, and the plants are planted out early in March in deep drills in warm borders. In cold situations I have seen trenches used to advantage, these covered at night in cold weather. Grown thus in pots a great deal of the success obtained depends upon growing the plants as hardy as possible at the start, and in giving them room to develop. In planting, the soil should be made firm about the roots. *G. Wythes, Syon House Gardens, Brentford.*

TONQUIN BEAN.

THE following extract is taken from Mr. Eugène André's *A Naturalist in the Guianas* (Smith, Elder & Co.), and reviewed in our columns Sept. 17, 1904, p. 197:—

"The Tonqua, Ton-ka, or Tonquin Bean of commerce, first reached Europe from the Chinese province of Tonquin. It is the dried seed of the fruit of *Dipterix odorata*, and it owes the peculiar odour for which it is valued to a crystallisable principle known as coumarin. At least two other known members of the vegetable kingdom, *Nelilotus officinalis* and *Anthoxanthum odoratum*, are indebted to the same principle for their fragrance. The tree has been found in different parts of tropical America, but the product exported from Para appears to be inferior to that which comes from the region in the vicinity of the Caura and the Cuchivero rivers. . . . The average altitude of the ranges [in this district] is between 3,000 and 4,000 feet, but there are peaks that attain an elevation of nearly 6,000 feet. Besides the mountain ranges, many isolated hills and large open masses of granite, only a little higher than the surrounding country, are scattered through the forest. The land in the vicinity of these mountains and lasas consists largely of granitic grit, and it is in this soil that the Tonka Bean tree appears to be at home. Although met with in patches, this tree is not by any means gregarious, so that the collecting of the fruit is arduous work. So irregular are the crops that it is almost impossible to forecast the

yield of any particular year. It may however be taken as a general rule, that for one or two years after a plentiful harvest the production is so scant that it does not pay to collect beans. In Venezuela the tree is known as Sarrapia, and the men engaged in the collection of the seed are called sarrapieros. The sarrapieros begin to arrive on the Caura early in February. Some of them come from considerable distances; a good many are from Ciudad-Bolivar.

During the months of October and November while the fruit is still quite small and green, the large macaws and several other members of the parrot family commit great havoc upon the young crop. No birds are more extravagant than parrots in their method of feeding, not so much on account of what they consume as of what they waste. Wherever these birds have eaten the ground is strewn with fruit only clawed and then awkwardly dropped, or perhaps with just a small piece bitten off. Hence the destruction before maturity of enormous quantities of this valuable product.

All through February and March the Caura, so deserted at other times, presents a scene of activity. Many boats are met with striggling against the powerful current of the stream, from the large bongo or dug-out of several tons with an entire family, to the frail skiff handled by two men. Those of a more enterprising disposition fit up expeditions of two or three bongos, and employ quite a number of hands. This is a time of plenty for the inhabitants of the place. Progress up the river is slow, and the boats make frequent stoppages for the purpose of purchasing fresh provisions and rum. Wherever there is a settlement the men will land, and most of them get drunk.

So soon as a party has selected a spot as a centre of operations, the men build the ranchos or huts, which for two or three months will be their home. If the fruit has commenced to fall, collecting begins at once; if not, the men wander about the forest noting the spots where fruit is plentiful, or they while away the time fishing and hunting. Every member of a family or party, man, woman, and child, takes part in the collecting. At day-break the work commences, the workers separating so that no fruit-bearing tree may be overlooked. After the trees in the immediate neighbourhood of the ranchos have been exhausted, the sarrapieros wander further into the depths of the forest; often they undertake expeditions to considerable distances and remain a week or a fortnight away. During this time they sleep in the forest, slinging their hammocks between trees, with a slight covering of wild Plantain leaves or Palm branches to keep the rain off.

The fruit of the Sarrapia is much like a Mango in appearance, and is largely eaten by the natives. It has but little pulp, which is sticky and of insipid taste, the seed being covered with a hard fur-like substance. After the sarrapiero has got together a sufficient quantity of fruit, he takes his find to some open spot where he can get the benefit of strong sunlight. The hard shell is then carefully broken between two stones, and a single oblong bean of a dark-brown colour obtained. The seeds are then spread out to dry, generally upon the large open masses of granite called lasas which form so peculiar a feature of the forests of this region. These dried beans form the Sarrapia or Tonca-bean, as it is sold by the sarrapiero to the merchants of Ciudad-Bolivar, where the process of crystallisation, as it is called, is sometimes carried out. This operation, however, costs very much less if performed in Trinidad, where the strong rum required for the process can be obtained at a cheaper rate than at Ciudad-Bolivar. By the end of May or the beginning of June, the last beans have been taken, and the crop may be said to be over."

CULTURAL MEMORANDA.

JASMINES.

THERE are few gardens but contain some of these free-flowering and in many cases sweet-scented plants, either under glass or in the open. There is a large number of species to select from, but a couple of dozen or so comprise the cream of them. Among the warm stove or greenhouse varieties, perhaps *J. gracillimum* is best known on account of its delicious fragrance, flowering in mid-winter either as a pot-plant or in a basket. Being of slender growth it is best suspended from the roof in baskets. *J. Sambac* and its double form are well worth cultivating, and succeed best when planted out and trained to a pillar or rafter. This species has larger flowers than the first-named and is equally as fragrant. The above-named sorts have pure white flowers, as have also *J. azoricum* and *J. didymum*; the former is sweetly-scented and flowers from June until the end of November in the conservatory here and is a robust grower, requiring to be cut hard back during winter. *J. grandiflorum* has a more bushy habit. Its whitish flowers are reddish underneath, but it is seldom met with in gardens, nor is *J. undulatum* or *J. paniculatum*, both of which have white flowers. Among hardy kinds none is better known than the old *J. officinale*, the common white *Jasminum* which is so highly fragrant and thrives and flowers in almost any aspect against a wall. This requires to be spurred back fairly hard during winter or early spring as the flowers are produced at the tip of the young growths made during summer and are at their best from the end of July until October. I think that this variety flowers best when grown in a comparatively poor soil, as I can remember several instances where plants having had nothing but a hard road or foot-path for the roots to enter, have flowered profusely. *J. nudiflorum* is also well-known for its wealth of blossom during November onwards, and unlike the preceding its flowers emanate from nearly every joint on shoots made during summer instead of at the tips, and usually the growths are devoid of foliage when the flowers expand. This species succeeds equally well against a north wall as when given a position facing the south. In early spring spur it back similar to *J. officinale*, training up young shoots from the base every few years to replace the older ones. *J. floridum* and *J. fruticans* are hardy evergreen shrubs, and both have yellow flowers. *J. revolutum* has bright yellow flowers, and is very sweet-scented; this is a hardy evergreen shrub, and flowers from May throughout the summer. *J. primulinum* is somewhat new, and has large flowers of bright yellow colour; this is also an evergreen, and said to be quite hardy. We have a yellow variety here under the name of *J. triumphans*, but I have never seen it catalogued; this came from the Continent, making a robust climber, and the flowers are delightfully fragrant, and in bloom nearly the whole summer on a south aspect.

All the species mentioned root readily from cuttings, layers, or suckers; the greenhouse varieties grow and flower best in a mixture of peat, loam, and sand. Cuttings should be inserted in spring, and placed in a warm case and treated in the same manner as stove plants. The hardy sorts, if increased by cuttings, make roots more readily if placed under hand-lights or frames, choosing cuttings of firm wood, and inserting them early in autumn, although all the hardy species root freely in this part if stuck in under a north wall and planted firm in the soil. Most of the *Jasmines* are useful for supplying flowers for cutting, especially the hardy varieties, *J. officinale* reminding one of *Bouvardia Humboldtii* corymbiflorum when set up in glasses, but *J. nudiflorum* is a trifle too stiff, appearing to greater advantage on the plant. *J. Mayne*, Bickton, Devonshire.

COTONEASTER ANGUSTIFOLIA.*

VISITORS to one of the recent fortnightly shows of the Royal Horticultural Society were struck by the profusion of yellow berries (pomes rather) produced on a spray of this plant exhibited by Messrs. Paul & Son on behalf of M. Maurice de

The plant comes from Yunnan, where it was first found by the Abbé Delavay, and is very nearly allied to the common *Pyracantha*, a plant which has a wide distribution in Southern Europe and the Himalayas. Like it, it is spiny, but it differs from it in the linear obovate leaves, which are densely downy on the lower surface



FIG. 191.—COTONEASTER ANGUSTIFOLIA: BERRIES ORANGE COLOURED.

Vilmorin. Some compared the glowing fruits to those of *Crataegus Lelandi*, others to those of *Hippophae rhamnoides*, the Sea Buckthorn, which they resembled in colour.

* *Cotoneaster angustifolia*, Franchet, *Plant. Delavayanae* (1889), p. 221.—Rami virgati cortice rubro fusco; ramuli in spinam validam sepius mutati inflorescentia nunc longiores nunc breviores floriferi etiam haud raro apice vuluerantes; folia persistenter lineari-lanceolata, breviter petiolata obtusa cum mucronulo brevissimo, supra glabra, marginibus revolutis, subtus cinereo-tomentosa, nervi secundarii parum conspicui, utrinsecus 5–10 paralleli; flores albi pauci (5–6)

covered on the upper surface when young with stellate pubescence which soon falls off. At least, in the dried specimens the appearances are as we describe them, and the

racemoso-cymosi, pedunculis tomentellis brevibus inflorescentia folia non superans; calyx tomentellus, lobis ovato deltoideis; petala obovata vel subrotunda calyce duplo longiora; sepala mox post anthesin receptaculo duplo breviora; drupa 5-pyrena, pyrenis vix 6-seis potius cartilagineis, inter se omnino liberis. Folia 2 to 3 cent. longa, 5 mill. lata; flores dianth. 1 cent.; pedunculi 8 to 12 mill. long. Yunnan . . . Delavay, n. 3730, Likiang! . . . Delavay, un. 61 et 47!

berries (may we be excused the informality!) are likewise covered when young with a similar investment. The young flowers have their calyx-tube covered with a dense investment of white hairs, whilst the young shoots and the short petioles are covered with rust-coloured down. There is thus considerable diversity in the pubescence on different parts of the same plant. The plant has been in cultivation at Kew since 1899, but we do not remember to have seen it before it made its appearance at the Royal Horticultural Society recently.

The following notes are taken from a letter of M. Maurice de Vilmerin to Mr. George Paul:—

"The seeds were received in 1895 from Père Sonlie (Mission Étrangère) then residing at Tos'kou, in Eastern Thibet, and were most probably collected in that neighbourhood. Even if collected near the bottom of the valley, the locality points to a certain degree of hardiness. In fact, seedlings two to three years old suffered slightly from the frost; but two old bushes (which germinated in 1896) were not affected by 15° or even 17° Centigrade—that is about zero (0) Fahrenheit—in January, 1903.

"The young plants are for the first three to four years erect, but then the lateral branches begin to take much development, and the two bushes at Les Barres, left entirely unpruned, are of similar habit—that is, about 4 feet high, 6 feet wide, with the branches mostly horizontal, the lowest trailing on the ground.

At the time of the visit of the Botanical Congress in 1900, the two bushes at Les Barres had already some fruits. They were green, turning to yellow on October 1, and gained their fine orange colour a month later.

One of my original seedlings was given to the Botanic Garden of Montpellier; but it is not so fine as the bushes at Les Barres, on account, I suppose, of too dry a summer. I think it will be very valuable for the West of England and of France, and that the plant will be very well adapted to the London climate.

The resemblance of the foliage with *Cratægnus pyracantha* Lelandi is manifest, but the habit is different, and the fruit is five-seeded. It will be very easy to propagate, as it seeds profusely, and will probably be easily multiplied by cuttings of young shoots in summer." M. T. M.

COLONIAL NOTES.

MOMBASA, BRITISH EAST AFRICA.

WELL, here I am at my port of destination on this island, a most beautiful place, amid luxuriant tropical vegetation. It is only some three miles long and a few hundred feet from the mainland. The climate has been most pleasant so far, with a coasting sea-breeze right from the Indian Ocean in front of us, and I have quite enjoyed the entire change of scene and life. Mombasa is a very ancient town, dating back many centuries, and contains the ruins of a fort attributed to the great Portuguese navigator, Vasco de Gama, in the sixteenth century. The present fort is probably nearly as old, and the whole town, with its narrow streets and quaint buildings, interspersed with coral-built huts roofed with Palm-leaves, is most picturesque, though it is not quite so oriental as Zanzibar. It is the first time I have really properly seen Cocoa-nut Palms in perfection; and what beautiful trees they are too! Limes and Bananas abound, and many beautiful flowering shrubs, including Bougainvilleas. There is one specially pretty flowering bush, of which I cannot yet get the name. It grows to a height of 10 feet or more with an Acacia-like leaf, and has fine flower-spikes with red and orange-tipped blooms thereon. It grows like a weed here. The seed is somewhat like a small French bean in size, shape, and colour.

I enclose a few for inspection. To-morrow (October 17) I proceed to Nanh in the interior, some twenty-four hours' ride by rail; but I am doubtful whether I shall get to Victoria Nyanza this time. I may say that everything in Mombasa is more Indian than African, and the currency is the rupee. I find that one has to work much more leisurely in the Tropics, as the heat here between 11 A.M. and 2 P.M. is very intense. I have to go about in a big brown helmet, as it is not really safe to wear any other hat. W.

DIFFICULTIES OF A GARDENER IN INDIA.

A REPORT recently published of the gardens of His Highness Maharana Fateh Singhji Bahadur, gives an amusing account of the difficulties that beset the conscientious gardener in India when trying to defend his master's property. We read that—

"So long as native visitors go sight-seeing, and no expense is incurred, they are quite at ease. However, they forget that the garden is entirely a pleasure resort, and knowing this they should endeavour to assist in preventing damage to grass, fruit, and flowers. Stealing seems to be a born instinct in many visitors. Flowers and fallen fruit are invariably carried away in the familiar brass vessel called 'lota'; and so long as the flowers are presented at their temples, no harm whatever is done. When they are questioned as to the removal of such flowers and fruit, they simply reply: 'They did not know, or they did not think it any harm,' with an innocent expression on their faces that often gives them their release. The young variegated shoots of Doob-grass (*Cynodon dactylon*) are carefully plucked by women worshippers, who come in hundreds, squat on the grass, pluck a small handful, which is neatly arranged into a little bouquet, and taken also to their temples. It is difficult to find fault with those ladies, for it is a customary thing, which has been going on for generations. It seems a nice way of presenting their simple offering to their gods. One old lady was brought to me on several occasions charged with removing flowers and grass in this way. Once she had in her lota several flowers of *Artabotrys odoratissimus* with others, the strong smell of which was sufficient evidence to convict her. She tried to assert her innocence, but lost her case. I told her that whenever she wanted flowers for such purposes I would gladly let her have a few, but she flew into a violent fit of temper, and told me she was not the least obliged for my kind offer. She had been doing this since she was a little girl, and all her people for generations before her. She would never ask the sahib for permission. I saw it was useless to contend with her, and allowed her to depart in peace. I notice the same old dame is doing the same thing day after day with impunity. A quantity of loose flowers and garlands are used during the year in the temples—*Roses*, *Jasminum* of sorts, *Nerium*, *Hibiscus*, *Rosa sinensis*, *Pandanus*, *Chrysanthemums*, *Calotropis gigantea*, and in fact all pretty flowers are used for decoration in one way or another.

The Indian mode of plucking flowers is entirely different to the English way. The actual flower is first nipped off without any stem or leaf. Native ladies do not possess pockets, but they have a much better mode of accommodation than their English sisters; they place the flowers in the folds of their saris or shawls.

Foliage is also used in the temples. Leaves of Plantain, Mango, *Mimusops*, *Elengi*, *Guatteria longifolia*, and *Santalum album*. The Lotus flower (*Nelumbium speciosum*) is one of the most sacred temple flowers, and it really is a majestic one. Nothing is more beautiful than a lake of

Lotus in flower. I think, with the exception of Victoria Regia, it is the most beautiful of aquatic plants, and stands out for such a long time."

It should be added that these gardens are at Uddipur, Mewar.

THE ROSARY.

ORIGIN OF THE WHITE MARÉCHAL NIEL ROSE.

IN the nursery of Mr. C. A. Blau, Münchenbernsdorf (Thuringia), there grows in one of the greenhouses the original plant of the "White Maréchal Niel." This tree was planted some twenty years ago, and is covered every year with lovely creamy-white, sweet-scented blooms.

Mr. Georg Blau, Baden-Baden, has given me some information about the history of this Rose, and also I take some notices from *Die Gartenwelt*, vol. viii., pp. 608, 617.

The first plant of the White Maréchal Niel was sent out in the autumn of 1895; at the same time that Mr. Nic. Welter, Trier, also offered a white Maréchal Niel, but I do not know whether his variety is identical with that of Mr. Blau.

To the history may be added the following: Among some Maréchal Niel Rose trees which covered the back wall of a forcing-house in the nursery of Mr. C. A. Blau, one plant did not produce flowers of the usual deep-golden yellow colour, but some of a dirty creamy-white. A friend of Mr. Blau advised him to cut this tree down, and plant a good one instead, which, however, was never done. By-and-by the colour changed to a purer white, so that it seemed to be a *Niphetos*.

In the year 1892—93 Mr. Blau sold flowers of the supposed *Niphetos* to various persons in the German Empire, also to Mr. Westphal at Plauen, who soon found out that it was not a *Niphetos*, but a sport from Maréchal Niel. Mr. Westphal ordered later on a larger quantity of buds, and tried to propagate this new sort as quickly as possible. Frank Koehler. [The Rose subsequently became the subject of disputes and legal controversies, into the merits of which we cannot enter. Ed.]

ORCHID NOTES AND GLEANINGS.

CIRROPETALUM RETUSIUSCULUM.

THE reappearance of this pretty species, originally described by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1869, p. 1182, is indicated by an inflorescence sent by that enthusiastic lover and keen hunter of pretty "botanical" Orchids, F. W. Moore, Esq., the Curator of the Royal Botanic Gardens, Glasnevin, Dublin. It was recorded by Parish and Colonel Benson, "on Moollee, Tenasserim, altitude 5,000 to 6,000 feet." In this case it is said to have been imported by Messrs. Sander, of St. Albans, from Cochin China. The umbel bears flowers about three-quarters of an inch in length, and each bearing a strong resemblance to a *Restrepia*. The upper sepals are dark purple, the coherent lower sepals are yellow marked with dark red.

LYCASTE × LUCIANI.

Mr. George Reynolds, gr. to Leopold de Rothschild, Esq., Gunnersbury Park, sends two very handsome and interesting *Lycastes* which he has been fortunate enough to flower out of a small lot from Guatemala, bought as *Lycaste Skinneri*. The one is a species and the other a natural hybrid.

Lycaste × Luciani, a natural hybrid between *L. Skinneri* and *L. lasioglossa*, was figured in *Lindenia*, vol. ix., p. 59. The flower sent by Mr. Reynolds is larger than the figured variety, the flower measuring over five inches across and the sepals of a more uniform bright rose. The

petals are white freckled with rose on the inside; the lip, which has the hairy surface of *L. lasioglossa*, bright magenta rose with white margin and yellowish tint on the disc; column, white. *Lycaste lasioglossa* (*Gardeners' Chronicle*, 1872, p. 215) has lanceolate acute sepals nearly six inches at their greatest expansion, and of a reddish cinnamon-brown colour; petals bright yellow; lip, narrow and with a much elongated hairy front lobe, yellow with red markings inside the lateral lobes; column, whitish with red markings on the under side. The bases of the sepals have patches of white downy processes, and the whole flower a very singular and attractive appearance.

EPIDENDRUM TRICOLOR (ROLFE).

This pretty and extremely rare species has flowered with Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), whose specimen and that at Glasnevin probably represent the whole of it in cultivation. It is a

brought the Clare Lawn *Phalaenopsis* to such perfection, viz., an even and comfortably warm temperature all the year round. *Sarcophilus Berkeleyi* was discovered by Major-General E. S. Berkeley in 1880 in the Island of Camorta, and described by the late Professor Reichenbach as *Thrixspermum Berkeleyi* in the *Gardeners' Chronicle*, April 29, 1882. It has long, drooping spikes of wax-like cream-white flowers, with two small violet spots at the base of the lip. It is not a robust grower, and its flowers are somewhat similar to those of *Saccolabium Hendersonianum*, but on pendulous instead of erect racemes.

AN AMERICAN "TREE-GARDEN."

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE ARNOLD ARBORETUM, under the able directorship of Professor C. S. Sargent, is without doubt the finest "tree-garden" in the world.

Along the foot of the hill behind the brook *Kalmia latifolia* and *Rhododendrons* are a blaze of colour in spring, and groups of *Azalea Kämpferi*—a species collected on the high mountains of Japan, and introduced to cultivation by Professor Sargent—furnish masses of vivid red. Along the brook are to be seen in due season many showy native plants in a perfectly wild state, species which are favourites in the rock-gardens or herbaceous borders of this country.

Viburnums, *Cornus*, and a host of native shrubs are used for massing along the drives, and not only are they extremely effective when in flower, but equally or more so when laden with fruit or clothed in the brilliant autumnal tints which mark the North American fall of the leaf. During the whole of the season of growth, indeed, there are always objects of great beauty and interest to be seen in the Arnold Arboretum, and all tree-lovers should, if possible, make a pilgrimage



FIG. 192.—GROUP OF HEMLOCKS IN THE ARNOLD ARBORETUM, U.S.A.

rather slender caulescent plant bearing a graceful pendulous raceme of about fifty flowers, each about half an inch in length. The flowers, which are closely and regularly arranged, are cream-white, the singularly formed fleshy labellum being orange colour with purple lines at the base. It is winter-flowering, for the plant originally described bloomed late in November. The plant was imported from Venezuela with *Cattleya Mossiae*.

SARCOCHILUS BERKELEYI.

A specimen of this pretty Malayan Orchid is flowering for the second time this year in the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young). The same plant has been growing and flowering regularly in the collection for many years, the treatment given it being the same as that which

Not only is it a vast tree and shrub museum—where are cultivated every species and available variety of ligneous plants capable of withstanding the severe winters of New England—but it is also one great series of object-lessons to the tree-lover and landscape gardener.

Hemlock Hill (fig. 192), one of the glories of the Arboretum, is a bit of primeval forest, which by some miracle has been preserved to the present day. In all probability some of the trees quite near the site of the accompanying illustration were standing at the time of Columbus' discovery of America. By the way, no one who is only acquainted with the Hemlock Spruce in Britain can form any idea of the beauty and majesty of the tree under favourable conditions in its native home; it forms straight stems, which rise to a considerable height, and thrives on rocky slopes.

there. The writer has had the good fortune to see the Arboretum many times, and he lives in hopes of again revisiting it.

The larger-growing trees [are planted in specially planned groups, arranged according to their botanical affinities, and so it is easy to find the Oaks, Walnuts, Hickories, or, indeed, any other family. It would require much space—many numbers of the *Gardeners' Chronicle*—to do justice to the Arnold Arboretum, either from a dendrological or landscape point of view, and an abler pen than that wielded by the present writer. G. N.

[For the photograph whence our Supplementary Illustration was taken we are indebted to the courtesy of the Director of the Royal Gardens, Kew. In further illustration of the subject we make the following extract from a paper read by

Mr. Wilhelm Miller, at the conference of horticulturists at St. Louis, on November 10, and printed in full in the *American Florist*.—

"One of the most fruitful gifts that has ever made to humanity was that which resulted in the Arnold Arboretum, the best collection of hardy trees and shrubs in the United States. Although the arboretum is of immense practical value to horticulture, the chances are that the story of its foundation is unfamiliar to the majority of this audience, even to those who have had the pleasure of a visit to the arboretum. James Arnold was not particularly interested in trees and shrubs; he did not leave the money for that specific purpose, and his gift was rather small. He was a New England merchant who retired at fifty, enjoyed a good garden, and had confidence in the judgment of his friend, George B. Emerson, author of the well-known report on the forest trees of Massachusetts. Doubtless acting on Mr. Emerson's suggestion, he left the money for the improvement of agriculture or horticulture, purposely stating the object in the vaguest possible manner, so that the trustees could put the money into whatever promised the biggest returns to humanity.

It happened that they put the money into a collection of trees and shrubs. It happened that they were fortunate to secure as director a wealthy man who not only gave them the best collection of books on trees and shrubs in the world, but better still has devoted his life to the service of science in the same spirit and with the same effectiveness as Lawes and Gilbert or Charles Darwin. In fact, it was this director, Professor Sargent, who made the notable bargain with Harvard University and the city of Boston, which has magnified the original gift of James Arnold to an effectiveness far beyond his dreams, so that his service to humanity becomes comparable to that of two colonial ministers who gave what they could spare, viz., Elihu Yale and John Harvard.

Now for some of the fruits of this piece of financial engineering which it took five years to perfect. First, the *Silva of North America*, probably the most splendid scientific book of any kind that has been produced in the Western Hemisphere, certainly the best work ever published that describes the trees and shrubs of any country. Second, *Garden and Forest*, the best horticultural periodical we have ever had. Third, the Jessup collection of the trees of North America, now preserved in the American Museum of Natural History at New York, a collection which is all a tree-lover, horticulturist, botanist, forester, lumberman or wood-worker could wish for. Fourth, its census of the forest wealth of the country, which had much to do with the establishment of a national forest reserve that now amounts to sixty-two million acres of timberland. Fifth, its work in connection with the establishment of the first State reserve, that of New York. Sixth, its part in the rescue of Niagara Falls and the creation of a great park there. Seventh, its contribution to landscape gardening, since it has shown that a botanical garden may be made primarily a beautiful park, instead of a mere outdoor museum. Eighth, its educational value to the general public, to college students, and to nurserymen and gardeners. Lastly, its direct practical services to horticulture in testing the hardiness and ornamental value of new and rare trees and shrubs. All this is a great deal to grow out of a gift of about 10,000 dols. in 1868, but a wise gift often grows that way. An acorn makes a small start, but it has big possibilities. Every small city and every county needs some sort of improvement or horticultural society. The country is now crying for a set of decently trained gardeners, and the only way to get them is to start agricultural high schools. Despite our enormous superiority in numbers and wealth, we are far behind England in horticultural periodicals and other publications."]

* PLANT NOTES.

BEGONIA CORALLINA.

This is a most beautiful variety when well grown, and an ideal pillar-plant; but I have never seen it to better advantage than at Curraghmore, the residence of the Marquis of Waterford, in Co. Waterford, where Mr. Crombie has it planted out in a large span-roofed house used as a fernery.

The centre stage is furnished with large specimen Ferns, and the Begonias are planted out in a bed under the side stage, brought up by the rafters, and then thinly trained on wires to the top of the roof of the house. When I saw the plant last summer it had already crossed the apex, and was descending on the other side. It presented a perfect sheet of coral-coloured flowers, making one of the most beautiful effects of the sort I have ever seen. The variety is a good grower, but, like most other plants, responds best to proper treatment and attention. J. G. W., Bessborough.

CYPRIPEDIUM INSIGNE "ODDITY."

THE two side petals of a *Cypripedium* are usually flat, whilst the third petal forms the pouch-like lip which is so conspicuous a feature in the genus. In the specimen before us the side petals, instead of being flat, have the same form as the lip. We are justified, therefore, in asking, "Where is the oddity?" Here we have a flower which is generally irregular becoming regular, but by increased irregularity! It is the ordinary flower that is odd—this one is symmetrical. It is an instance of irregular peloria (Masters' *Vegetable Teratology*, p. 219). It has been frequently exhibited at the Royal Horticultural Society, and the illustration (fig. 193) was taken from a specimen grown in Mr. G. C. Waud's garden at Fernhurst, near Baildon, Yorks, under the care of the gardener, Mr. W. Taylor.



FIG. 193.—CYPRIPEDIUM INSIGNE "ODDITY."

The Week's Work.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Peach and Nectarine Trees.—It is preferable to leave the pruning and nailing of these fruit-trees until the pruning of the other trees is finished, as this will allow a longer period for the wood to become thoroughly ripened. If the trees are nailed before this is accomplished and very severe weather sets in, it frequently happens that the young growth is injured, which necessitates its removal, and thus bare spaces are caused in the trees. If the leaves hang somewhat late, it is a good plan to remove a portion with a light Birch broom in order to expose the young wood to the light and sun. This, however, should be done at an earlier period than the present—say early in November. The practice is often resorted to of removing all the branches from the walls and fastening them a distance therefrom in order to retard the flowers. This is, however, never practised at Wrotham Park, and only twice in many years have our trees failed to produce good crops. Still, there are some gardeners carrying out this system with good results. Young trees may be planted with a prospect of success until the end of March. When planting some rich and moderately dry soil should be worked in amongst the roots, especially if the borders are in a wet condition.

Planting Wall Trees.—Trees that are intended for permanent positions should be planted at a

distance of 18 feet apart. Between these other trees may be planted temporarily, with a view to removal when the permanent ones require more space. Do not plant late-fruiting varieties in cold districts, as their fruits seldom ripen satisfactorily. The following will be found good reliable varieties of Peaches—Waterloo, Hale's Early, Dymond Bellegarde, Stirling Castle, Goshawk, Violette Hative, and Barrington. The fruits of Waterloo should be gathered several days before they are fully ripe. Of Nectarines, a selection may be made of Lord Napier, Elruge, Humboldt, Pineapple, and Dryden. Examine all the older trees that have been fruiting for many years, with a view to replace any that are worn out. Young trees of good varieties should be in reserve for this purpose. They may be trained either on a wooden fence or on walls, and thus they will acquire several seasons' growth before they are planted in their permanent situations. In selecting young trees see that they have been worked on suitable stocks. Choose those that are swelling freely and that show no signs of having been checked. If at any time too much coarse wood is produced prune the roots somewhat.

Raspberry-beds.—If a mulch of good manure has been placed over the roots, the stakes and framework made good, and the canes thinned, regulated, and made secure, they will require nothing further until February or March, when the canes should be shortened to the required height. For the production of good fruits the rods should have a healthy brown appearance, and not be too strong or coarse. Newly-planted canes should be left until they show signs of growth, when they should be cut level with the ground, in order to allow the new growth to develop into sufficient strength to produce fruit. Superlative is a good reliable variety of Raspberry.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Medinilla magnifica.—The floriferousness of this fine plant may be increased by affording it a thorough rest, and this may be secured by keeping it during the winter in a temperature of from 55° to 60°. It should be grown throughout the summer in a light position in the stove, and at the beginning of the autumn, when the growth is matured, it may with benefit be freely exposed to the sun, and without risk of injuring the foliage. When the growth has become well matured in this way, the plant may be expected to produce its large, pendulous trusses of pink flowers on each shoot. Few occupants of the stove present a more striking appearance than *Medinilla* when so freely flowered. The flowers are produced in May, and remain a considerable time in perfection. Possibly the reason why this plant is not more generally grown is that the flowers cannot well be used in the cut state. When repotting is necessary, it should be done in the spring, before the appearance of the flower-trusses. Loam, peat, and leaf-soil in equal proportions, with the addition of a liberal supply of sand, forms a suitable compost.

Coleus thyrsoides and *Moschosma riparium.*—Afford these plants a temperature of 55°, except in the case of plants the flowering of which it is desired to retard. These may be placed in the greenhouse, and afforded a temperature of from 45° to 50°. Plants here which were raised from cuttings inserted in the middle of July are now in flower, and are retaining their foliage better than in previous years, when the cuttings were rooted earlier. I think the propagation may be deferred even longer with advantage, and next season our cuttings will be inserted at the end of July. Three cuttings placed in a small pot, and potted-on when rooted without being divided, and grown-on without stopping the shoots, have made the most serviceable plants. The *Moschosma* is light and pretty while it lasts, but the flowers begin to fall rather quickly when once they are fully open.

Stephanotis.—Plants which flowered early, and have since been afforded a good rest in an intermediate temperature, may, if early flowers are required, be now started into growth. Let the

soil be afforded a watering with tepid water, and raise the temperature to 60°. Later plants may be afforded an intermediate temperature, and should not be given water in excess.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

French Beans.—Continue to make sowings at intervals as may be required. If the amount of space is limited, the pots containing the seeds may be placed under the stages or in any convenient corner where there is sufficient heat to cause the seeds to germinate, but as soon as they commence to push through the soil expose them to all the light possible. By this means a week or so can often be gained. When the earliest plants now in bearing are past there will be another batch already coming through the soil to take their place on the stages. Keep the atmosphere of the house from becoming stagnant by admitting a little fresh air when the weather is favourable. This is very essential to success during the dull days and long nights of winter, for if the plants are kept constantly in an atmosphere that is stagnant and moist, excrescences will be produced on the foliage, the whole plant will become unhealthy, and the flowers will fail to set well. The air should be admitted by opening the ventilators at the top of the house on the opposite side from that in which the wind may be blowing. Cold air should not be allowed to blow direct on the plants through the side ventilators, but if the ventilators are placed in such a position that the incoming air must pass over the hot-water pipes, no harm will be done, and the side ventilators in such circumstances may be employed.

Peas.—Where the soil is of a light nature and is in good condition for being worked, let another sowing of Peas be made almost on the surface of the ground, and cover the seeds as was advised in a previous Calendar. Those Peas which are now through the soil must be carefully protected against slugs, sparrows, &c., or the points will disappear.

Tomatos.—Where a stock has been raised from cuttings, let these be potted into pots 3 or 4 inches in diameter, as may be required by the individual plants. Place the plants in a situation fully exposed to all the light possible, and let the atmosphere be kept moderately dry, but not sufficiently so to prevent growth. Admit a little air when the weather is favourable. Plants now fruiting will require similar treatment. Apply a dusting of flowers-of-sulphur over the plants and floors of the house, distributing it evenly so that the quantity on the foliage is scarcely perceptible to the eye. Apply a spraying of paraffin and soapy water once a week, or oftener, over the walls, floors, and pipes. After two years' trials, I believe that this well-known insecticide is, to a certain extent, a preventive of fungoid growth.

FRUITS UNDER GLASS.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Strawberries in Pots.—When the flower-trusses appear on the earliest plants, it will be necessary to examine the plants each day, and any that are dry at the roots may be afforded water that has been coloured with liquid manure. The temperature may be increased by degrees, but the first week in January will be sufficiently early to employ fire-heat, and even then a temperature at night of 55° will be sufficiently high, but may vary a little according to the condition of the weather. During the day and by sun-heat the temperature may be 10° more, with the ventilators at the top of the house constantly open very little. If the atmosphere is permitted to become stagnant disappointment will invariably follow. Keep the plants well up to the glass, and let the glass be kept clean. In bringing in successional plants examine the drainage to see that the water given may pass freely through. Destroy worms in the soil by watering with lime-water.

Figs.—Where Figs are growing in unheated houses it sometimes happens in very severe

weather that the glass is not sufficient protection, especially if the trees have made strong, long-jointed wood, as they are likely to do if the soil is very rich and loose and the border extensive. In such a case the branches may be tied together in bundles and covered with a double thickness of mats. If straw be used for this purpose frequent attention must be given it, as I have found that it makes very comfortable winter quarters for mice. These animals very eagerly destroy the bark of the Fig-tree, and cause the loss of branches, which of course is seldom discovered until the trees are uncovered in the spring. If any of the trees are in an unsatisfactory condition carefully lift and replant them, using good turfy loam, with a good proportion of old mortar rubble and road-scrappings made firm. For the first season or two the border may with advantage be only one quarter as wide as the height of the trees on the trellis. Cover the border with some light material to protect the roots from frost.

Tomatos.—Plants with fruit in various stages should be given an intermediate temperature, with a free circulation of air. Be rather sparing in regard to root waterings, but do not allow the roots to get absolutely dry. The foliage and stems of the plants should be kept free from moisture. Young plants for fruiting in early spring that are at present in 3 and 4-inch pots should be kept growing steadily, and great care will be necessary in applying water. Plants at this season should not be placed in close contact with the glass. As the roots appear on the surface apply a light covering of wood-ashes.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Bedding Plants.—The late cuttings of Pelargoniums that were rooted in boxes will require but little water till they show signs of growth. The temperature should not fall below 45°. All cuttings and plants should be given a position near to the glass where there is plenty of light. The propagating pit should be got in readiness, giving the walls and the soil beneath the pipes a good syringing with soft-soap and paraffin. This will prevent insects, especially cockroaches. The case may then be filled with fresh leaves. Alternantheras on the shelves will be making a few roots on the surface-soil: these may be taken off if the stock is short and placed in shallow pans, using plenty of sand, and placing them in a considerable heat, keeping the glass wiped twice a day. Old stools of Heliotrope and Lantanas may be cut back. Bedding Fuchsias, fibrous-rooted Begonias, specimen plants of Ivy-leaved Pelargoniums and Plumbago capensis may be thinned out and put in readiness for the spring.

Dolias.—Examine these and cut away all decayed parts, at the same time select the tubers required to produce growths for the making of cuttings in a few weeks' time. These are best if kept in a brick frame where a little fire-heat is available, and plenty of ventilation employed to keep away damp.

Lobelia cardinalis.—Where the stock is short the offsets with young roots may be taken off and potted in small pots, using plenty of sand in the soil. Place them in a warm frame.

Echeveria secunda glauca.—Plants in a cool frame or house must be looked over occasionally, as the fleshy leaves soon rot the stem if kept very damp. The young offsets may be placed in boxes if they are required, and these will make medium-sized and better plants than the old stock. The roots of the old plants may be cut back, and any bruised leaves removed. Dry soil should be used if the plants are in an unheated structure.

General Work.—Much may be done at this time of the year when planting operations are at a standstill to forward the work in the spring. Shrubberies may be cleaned, and after the leaves have been raked up, the surface of the soil should be forked over. Laurels may be cut in mild weather, to give additional room to other shrubs. Hazel-sticks should be cut for use in flower-borders. These may be tied up in bundles according to size,

and placed on the boilers. Coil stakes for Carnations should be painted with some good hard paint. These stakes are undoubtedly the best for this purpose, and they can be obtained in any length. The grinding of new and old scythes, shears, should be seen to, and all tools should be put in order. Sweet Pea sticks can be cut over, and laid down flat with a good weight on them. Roll the paths well after there has been frost.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Dendrobiums.—Plants of *D. Wardianum*, *D. crassinode*, *D. Clio*, *D. micans*, *D. Wardianojaponicum*, *D. Eurycles*, *D. Euterpe*, *D. Aspasia* and others of this section which commence to push up new breaks from the base of the current season's flowering growths a long time before the flowers open, require careful treatment as regards moisture at the roots, or these growths will develop very rapidly, and the flowers will be less good than they would have been. Although some of these plants are showing their flower-buds, water must be given only after long intervals of time, just enough to prevent excessive shrivelling of the pseudo-bulbs, and if kept in a cool-house where the air is dry, the new breaks will remain almost stationary until the spring, when the flowers will open and the growths restart away vigorously. Such species as *D. nobile*, *D. Linawianum*, *D. tortile*, *D. aureum*, *D. signatum*, *D. transparens*, *D. Pierardi*, and the garden hybrids, *D. Juno*, *D. Wiganae*, *D. Wiganianum*, *D. Dominianum*, *D. splendidissimum grandiflorum*, *D. Myra*, *D. Burfordiense*, *D. Cybele*, *D. melanodiscus*, and numerous others of this class have not the propensity to start prematurely into growth when their flower-buds appear. Many of these plants are now showing their flowers, and may be brought from their cool resting quarters into a slightly warmer atmosphere, where the temperature at night is usually at this season kept at about 55°, and remain there until the flower-buds are well advanced, after which time they should be removed to the lightest side of the East Indian house. Very great care must be exercised in applying water at the root at comparatively long intervals of time; only sufficient is needed to keep the pseudo-bulbs plump, and induce the slow advance of the buds. Too much water in the compost at this season will cause the old roots to decay prematurely. Where many of the above varieties, especially *D. nobile*, *D. splendidissimum grandiflorum*, *D. Cybele*, &c., are cultivated, and are required continuously for decorative purposes, flowers may be obtained during several months by placing those plants earliest matured in a cool-house as soon as their growths are fully made up, and bring them again into gradual warmth as flowers are required. In some collections there are many plants of *D. nobile* and its varieties which have only now completed their season's growth, these if properly rested will produce flowers during April and May. Such *Dendrobiums* as *D. primulinum*, *D. cretaceum*, *D. crepidatum*, *D. Parishii*, *D. Bensoniae*, *D. superbum* (*macrophyllum*), *D. secundum*, *D. rhodopterygium*, and *D. albe-sanguineum*, should be kept in a temperature like that of the Cattleya-house in this their season of rest; and all of them should be kept as dry as possible at the root till the flower-buds show, when more warmth and moisture should be afforded them. The distinct *D. Phalaenopsis*, *D. bigibbium*, *D. superbiens*, *D. Statterianum*, *D. undulatum*, *D. taurinum*, and others of this section, should be rested in a house where the temperature rarely falls below 60°. The plants will need only sufficient water at the roots to avert undue shrivelling of the pseudo-bulbs.

"THE LIVE STOCK JOURNAL ALMANAC," 1905, appeals to raisers of horses, cattle, sheep, pigs, and poultry, and is full of information of interest to all concerned in the maintenance and improvement of flocks and herds. Messrs. VINTON & Co. are the publishers.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

SALES FOR THE WEEK.

WEDNESDAY NEXT—

Greenhouse Plants, 2 Horses, Vans, and Sundries, at Calcot Gardens, Bath Road, Reading, by Protheroe & Morris, at 12 o'clock.

THURSDAY NEXT—

Palms, Plants, Roses, Fruit Trees, Azaleas, Bulbs, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —37°.

ACTUAL TEMPERATURES:—

LONDON.—Tuesday, December 20 (6 P.M.): Max. 41°; Min. 31°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—If Tuesday, Dec. 21 (10 A.M.): Bar., 30.4; Temp., 37°. Weather dull, with considerable fog.

PROVINCES.—Tuesday, Dec. 20 (6 P.M.): Max. 45°, South Coast of England; Min. 31°, North East Coast of England.

The Marvels of the Daily Press.

THE Parliamentary recess is generally known as the Big Gooseberry season. This autumn, Potatoes worthy of CROESUS, Cactuses without spines, and Apples destitute of core have been expatiated on in the lay Press as variants from the big Gooseberry. It is satisfactory to learn that the newly-established Potato Society will soon be in a position to afford trustworthy evidence of the true value of some of the chimeras which have fascinated the imagination of the public or stimulated the cupidity of the covetous. Exhibitions, of course, have their use, but a series of carefully-conducted trials on a sufficiently large scale will be of more substantial and permanent value.

As to spineless Roses, Gooseberries, and Cactuses, we are aware that such things do occur; and as to seedless Oranges, Grapes, and Gooseberries, we all know that the fruits may be, and are occasionally, ripened even when the seed is not efficiently fertilised, and cannot develop. Imperfect fertilisation, then, from climatal causes or from the absence at the right time of the right insect, may lead to seedless fruits. But in another season, when the conditions are more favourable, the seed may be developed as usual.

In another class of cases the seedlessness has become more or less permanent, as in seedless Berberies, in the Black Monukka Grape, in the Sultana raisins of the shops, and in some Pears in which the seeds are not formed, as in the *poires sans pepins* of our neighbours. Propagation by seed is of course out of the question in such cases.

Some seedless Apples and Pears are in a different category. It is difficult to make the members of the public realise, what is familiar to every botanist, that when they are eating an Apple or a Pear it is, strictly speaking, not the fruit at all of which they are partaking, but merely the flower-stalk, which becomes distended and fleshy, enclosing within its substance the core, which is the true fruit; and the same holds good in the case of Melons and Cucumbers, where the flower-stalk might swell up and produce a "Cucumber" without the seed being fertilised. This is not uncommon in Cucumbers, but in our experience is very rare in Melons. It is quite possible, and indeed it is not infrequent for the flower-stalk to swell up without the formation of any fruit (core) or seed. Often enough no petals are produced in these cases, still more frequently the petals are increased in number, so that the flower of such a Pear, and especially of such an Apple, resembles that of a Rose. Flowers of this kind, if we may so call them, are common enough on the midsummer shoots, and are formed when the growth is untimely, when some irritation, as by insect puncture, has been set up, or when the balance between the intake of food and its digestion and utilisation is from any cause upset. Whether this state of things can be perpetuated by grafting we cannot of a certainty assert, but it would not surprise us if in some cases such were the case. Our back volumes contain numerous illustrations of these so-called "freaks." We protest once more against the use of such a term, which is used merely to gloze over our ignorance. We may be quite sure that in the orderly, methodical course of Nature there are no such things as freaks, but that the productions now spoken of are the result of causes and complex conditions as yet imperfectly appreciated by us.

Since the above note was written another wonder has turned up in the shape of a Radish, which report says has been transformed into a Potato! The foundation for this wild story is simply this, that by certain chemical agencies it has been found possible to increase the quantity of starch grains in a Radish, and to that extent to increase the resemblance to a potato. M. MOLLIARD, it appears, has cultivated Radishes in a concentrated solution of glucose, with the result that in place of sugar the cells of the Radish become filled with starch grains. But the Radish remains a Radish, and the transmutation to a Potato exists only in the imagination of the reporter.

*** OUR ALMANAC.—According to our usual practice, we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1905. In order to make it as complete as possible, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.

ARBOR DAY was, according to the *Agricultural News*, celebrated with great enthusiasm on the King's birthday, November 9, in Antigua, Dominica, St. Kitts, Nevis, Tortola, and other West India islands. The Government officials, the directors of the several botanic stations, the school children of all denominations, took part in the proceedings, which were watched with great interest by the inhabitants, native and European. Nothing but good can come of such celebrations properly carried out.

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—The Council of this Society and the Representative Committee to co-operate with the Council in connection with the 1905 International Show, met in 5, St. Andrew Square, Edinburgh, on Wednesday, December 14, to revise and adjust the Schedule of Prizes for the International Show. As adjusted the Schedule includes handsome prizes for Fruit, Plants, Cut Flowers, Vegetables and an experimental section, besides a competitive plan for under-gardeners, the total prizes amounting to over £1400. It is expected that the Schedule will be issued early in 1905. Donations to the amount of over £600 have been intimated, but in order that the Exhibition may be really worthy of the occasion, the Council hope that further donations may yet be received.

KEW.—A list of seeds of herbaceous plants and of trees and shrubs which ripened at Kew in 1904 has been published. The seeds in question are available only for exchange with other botanic gardens and with regular correspondents of the establishment. They are not offered for sale.

SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.—The date of the annual banquet of the Society has been fixed for January 14 by M. PHILIPPE DE VILMORIN, who will occupy the chair on the occasion. The banquet will take place at the Café Royal, 68, Regent Street, London, W., and it is hoped that a large number will attend.

THE FIRE AT THE SHREWSBURY SHOW IN AUGUST LAST.—Mr. A. F. DUTTON, [the Carnation specialist, was able to extinguish a fire that might have had serious consequences to the exhibits at the Floral Fête in August last, and in recognition of the service he then rendered, Mr. DUTTON has just received from the Shropshire Horticultural Society a handsome silver waiter, bearing an inscription of his name and the date of the fire.

APPLES AND PEARS.—M. D. Bois presented to the *Société Nationale d'Horticulture de France*, on November 24 last, an Apple, the form of which was exactly similar to that of a Pear. The characters afforded by the rind, the perfume, and the "eye" showed that in spite of the appearance the fruit was really an Apple. Nothing was said about the absence of "grit." No Apple that we know of possesses grit-cells; but then some Pears are almost destitute of them; but these are exceptional cases. We have often seen Apple-like Pears, but do not remember to have seen Pear-shaped Apples.

EARLY-FLOWERING CHRYSANTHEMUMS.—We are informed that Messrs. DOBBIE & Co., Rothe say, have been awarded a Gold Medal by the Royal Botanic Society for a collection of early-flowering Chrysanthemums, which has been grown for trial in the Society's gardens.

AMERICAN APPLES.—I wish you could come over and see the fruit growing in this country, for it is the greatest, if not the best, enterprise of its kind in the world. We have neglected quality for many years, simply because it was more profitable to do so. But the time is coming when our fancy markets will pay good prices for a strictly prime article, and we have a number of growers already catering for that market. Mass.

GRAPE-GROWING IN THE OPEN.—A curious method of growing Grapes is illustrated and described in No. 50 of *Möller's Deutsche Gärtnerzeitung* (1904, pp. 603, 604). The sloping sides of a hill are so cemented as to form sloping terraces. There are five of these banks altogether, each being 6 feet 6 inches in height. The face of the slopes is hollowed out into longitudinal grooves, running from top to bottom, in which the Vines are planted. Whether this scheme will prove successful or not the future alone will prove.

AMERICAN FRUITS.—Some idea of the commercial importance of the fruit-growing and fruit-selling trades are to be gleaned from an inspection of the journal called *American Fruits*, published at Rochester, New York.

"HOW TO MAKE A GARDEN."—A Practical Manual for Amateur Gardeners, by W. E. BLAIR (London: The Cable Printing and Publishing Co., Ltd, Hatton House, Great Queen Street, W.C.) This book is full of useful hints and illustrative pictures, such as the amateur can understand, and is written for the temporary tenant as well as for him who expects to work at his garden for years. Mr. BLAIR explains everything he can think of, from soils and aspects to florists' flowers. Mushrooms, insect enemies, and a monthly calendar are included as a matter of course, and we are glad to see an index also. The book postulates that the amateur gardener "1. Will work himself, and will do the hardest part, digging, trenching, and manuring, with his own hands, having no gardener. 2. That occasionally he will get a labourer, his wife (sic!), or a lad to lend a hand. 3. That he has no conservatory or glass whatsoever to raise plants in. 4. That he has no frames or hotbeds. 5. That, being able to save money by having no gardener, he can afford some chemical manure. Failing that, he can get street-sweepings if in a town, farmyard manure if in the country."

MIDLAND REAFFORESTING ASSOCIATION.—The annual meeting of this Association was held at the University, Birmingham, on Thursday December 15. The President, Sir OLIVER LODGE, said that he found a great interest in the work of the Association taken in all parts of the country. The membership, which last year was 94, was now 150. A spoil-bank of 4 acres at Wednesbury had been planted with 6,000 trees, paid for by the owners, the Patent Shaft and Axletree Company (Limited). They regarded it as an important advance that they should have induced a limited company to see that re-afforesting might be made a source of profit, for they wanted people to realise that by tree-planting they would be able to repay themselves. The Wednesbury plantation consisted of black and white Alders and a few Ash. Several other small plantations had been made in the Black Country. The Dudley Union authorities, who were approached, said that they were bound to rate plantations as soon as they were fenced, but they proposed to levy only 1s. per acre until the trees had a definite commercial value. Professor FISHER had visited the district and was very hopeful as to the future. Mr. A. P. GRENFELL, of the Indian Forest Department, had also inspected the ground, and calculated that small plantations would yield in twenty years a profit of 3 per cent., compound interest, while for larger areas the profit would be greater. As to the suggestion that the unemployed might be set to work on tree-planting, Sir OLIVER LODGE offered no opinion. He urged that the Association's work ought to be placed on a better organised basis, and suggested that a committee be empowered to take steps in this direction. This was agreed to, and the retiring officers were re-elected. *Times*.

ARTIFICIAL TREE-TRUNKS.—In a recent issue of the *Gartenwelt* is an illustration of a tree-trunk made of pottery covered with Ivy and used as a summer-house. This reminds us of a similar construction in the square at Amiens, where the imitation is so close as to defy detection at the distance of a very few feet. Pockets are provided in the structure, from which creeping plants descend and Ferns spring, but from which no dreaded fungus sprouts. We know the objections that may be raised, but when the work is so artfully constructed, as in these cases, the objections have no weight.

COLONIAL FRUITS FOR HOSPITAL.—The Hospital for Sick Children, Great Ormond Street, has received a handsome gift of fruit from the Dominica Agricultural Society. This fruit was offered to the King for his acceptance for the London hospitals, and at his suggestion was sent to the above hospital. Amongst the fruit were some eleven crates of Bananas, many boxes of Limes, Navel Oranges, Grape Fruit, Citrons, and Apples. The last-named were grown by Lord ABERDEEN on his ranche at Vernon, British Columbia, and exhibited by the Agent-General of British Columbia at the Royal Horticultural Show, which closed on the 14th inst. The Agent-General for British Columbia has sent us during the present week several specimens of the Apples grown in that Colony, and they are certainly of first-rate quality.

PLANT DRYING.—We are often asked to give particulars as to the best methods of drying and preserving plants for the herbarium, and find it difficult to give adequate information in the space at our disposal. Now we can commend to the notice of those interested a little pamphlet published at the cost of one shilling by WEST, NEWMAN & Co., 54, Hatton Garden, London. The author is Mr. STANLEY GUITON. The directions he gives are excellent and practical. For young gardeners whose time is short and means small they are perhaps needlessly elaborate, but the principles are so clearly expressed that anyone with an interest in the subject can easily adapt them to his own requirements and opportunities. We cannot all be dandies in our herbarium, as Dr. LINDLEY prided himself in being, and utility and space have with most of us to be considered before appearances. The author recommends that a series of specimens of each plant should be preserved in order to represent the species as fully as possible. "For some plants one or two sheets will suffice, for others ten or twelve will not be too many; as a rule, you will require four or five." This appears to us to be an exaggerated requisition, unless in the case of so-called "critical" species, or in the case of the preparation of a special monograph, when it is hardly possible to have too many specimens from different localities. In ordinary cases, one or two sheets with some detached flowers, fruits, or seeds in envelopes or "capsules" are all that is required. The acquisition of so many specimens partakes of greediness, unless they are intended for exchanges; whilst in the case of rare plants or plants of special interest, this wholesale collecting is strongly to be reprobated. How do such collectors differ from the hawkers who despoil our woods of Ferns, Orchids, or anything else that they can find a market for? The doctors who commit misdemeanors are adjudged guilty of infamous conduct "from a professional point of view," and public opinion should in like manner be brought to bear on marauding collectors. The author, by the way, does not appear to mention the "capsules" above mentioned, which are so very convenient as preventing the necessity of mutilating the specimen when an examination is required. Nor does he insist, as he might do, on the great advantage of making sketches of the details of the flower as observed in the fresh state. These drawings, however rough they may be, prove of great value as time goes on, and with practice it becomes easy to acquire representations which are faithful and suitable for the purpose, if not artistic. There is often an inverse relation between the value of an artistic drawing and that of one made for botanical purposes.

A VISIT TO THE OLD WORLD.—Mr. L. WOOLVERTON, Grimsby, Canada, thus records his impressions of London; how superficial they were is evident from his omission to mention the two-penny tube and the underground, which daily

convey as many passengers as would form a very large proportion of the population of the whole of Canada from the Atlantic to the Pacific:—"In general, my impressions, after visiting Great Britain and Europe, are decidedly in favour of Ontario, either as a field for enterprise or as a home in which to live. Those old-fashioned stone buildings, moss-covered with age and old-fashioned in style, such as you see in Oxford, in Blenheim, in Warwick, or Rowsley, and, indeed, everywhere in England and on the Continent, strike me as being a hindrance to growth; they would need tearing down and carting away before a modern building could go up [!]. And when you add to these material obstacles the sleepy conservatism of the people, you have conditions most unfavourable to rapid progress. Nobody is in a hurry in England [!]. If you want a cab you do not telephone for it, but go and hunt one up; there are no electric-cars in London proper, but the streets are full of old-fashioned two-horse omnibuses, with seats on top, to which you climb by a spiral staircase behind, and up there you travel slowly through crowded Oxford Street, Regent Street, or the Strand, and view the buildings and the masses of people at your leisure. The railway-trains do not travel quickly enough, but are very awkward; the same car is divided into numerous compartments, much alike, except for the labels, 1st, 2nd, and 3rd class, intended to divide the passengers according to their rank; and when once locked in, you are in prison till the guard unlocks your door again! The cars are very small, especially the freight cars, but years ago the bridges and the tunnels were made for small cars, and to enlarge the latter would mean a complete reorganisation, and entail endless expense."

BOTANICAL COLLECTIONS IN ST. PETERSBURG.—The Bulletin of the Imperial Botanic Garden, St. Petersburg, published in September, gives the following catalogue of the botanical specimens contained in that establishment. The growing plants number 34,887 species, varieties, and "sorts," classified into—greenhouse plants, 27,516 (84,569 specimens); out-door trees and shrubs, 784; hardy herbaceous perennials, 5,161; ditto annuals (species and varieties), 1,426. Among the most important of the greenhouse plants are Ferns 791, Orchids 1,469, Cactæ 777, Palms 343, Cycads 53, Conifers 593, Aroids 523, Bromeliads 413, Agaves, Aloes, and other succulent plants 931, plants from New Holland 911, arborescent plants from China and Japan 1,271, semi-tropical specimens from America 658, tropical monocotyledonous and dicotyledonous plants 2,512, herbaceous perennials 12,383. The houses number twenty-eight, with forty compartments and numerous frames. During 1903 the number of visitors to the houses was 40,290. The seed-beds contained 4,458 species and varieties. The herbarium was increased by forty-nine collections of 10,808 species, representing 52,421 specimens. The museum contains 27,795 fruits, 7,340 dendrological specimens, 2,098 palæontological specimens, and 4,525 vegetable products. The museum was visited by 1,113 persons. The library numbers 14,986 books in 30,952 volumes. Attached to the garden are a biological laboratory, a seed-testing station, a central phytopathological station, and a school of horticulture. The Director of the Garden has lately undertaken a journey to the borders of the Black Sea to study such soils as are advisable for use in the Garden. The Palms have been enriched by a fine specimen of *Licuala grandis*, presented by the well-known Belgian horticulturist, M. Wartel.

"THE ENGLISHWOMAN'S YEAR-BOOK."—We received *The Englishwoman's Year-Book and Directory for 1905*, that is published by Messrs. ADAM & CHARLES BLACK, London. This, the seventh year of a new issue, is edited by Miss EMILY JAMES

and forms a wonderful compendium of information concerning all departments of women's work. The book contains articles by specialists on the several subjects discussed, and has been brought up to date and revised when necessary. It will be found useful to all professional women, to many of whom its merits are already familiar. As regards the standpoint from which the subjects are treated the following extracts relating to women florists is characteristic. The writer says that—

"The florist can only learn her art properly by serving an apprenticeship. A course of lessons can only put her in possession of a few technicalities, but does not give that knowledge which is necessary for success, either as a responsible *employé* or as the proprietor of a business.

Those who learn with a view to start eventually for themselves should arrange to be taught buying, and they should be careful to go to a business where the work is of the same class as that they hope to carry on. City or suburban, or provincial training is not much use for the West End, for instance. On the other hand a good London training answers for work in country towns very well, and unless a florist has excellent London connections, she will often do better to start at a health resort or large provincial town than in London.

The terms on which apprentices are received vary considerably. A girl leaving a public elementary school is sometimes taken without premium, and while acting as errand-girl, is taught wiring and mounting and gradually how to make button-holes and sprays. She sometimes remains two or three years, and advances no further. She has no salary at first, but after a time may get 2s. 6d. to 5s. a week. If clever she may go to another shop as "improver" and get 10s. to 12s. 6d. As she gains experience she will earn 15s., 18s. 6d., and so on up to 25s. or 30s. A very first-class hand gets £2 2s. in the season (in London), but is often unemployed except at that time of year. Florists' *employées* seldom "live in"; food is sometimes given, that is, a mid-day meal and tea; where this is the case money payment is of course less in proportion.

Premiums paid for learning florists' work vary from £5 to £30. For the latter sum a limited number of girls of good birth are taken by the London Gardening Association, The Nursery, Ann's Place, Milman Street, Chelsea, S.W., and are taught wiring, mounting 'making-up' of all kinds of flowers, management of room-plants, conservatories, town gardens, and window-boxes. A course of four months may be had for £10 10s.

Ladies are apt to imagine that a good living can be made solely by the decoration of dinner-tables, which they fondly believe to be an easy and charming kind of work, for which the demand is unlimited, and on which the profit is enormous. These are delusions which cannot be too sternly dispelled. Single lessons in wiring, mounting, and making-up are charged 7s. 6d. or 10s. 6d., and some florists give courses of six, twelve, or eighteen for £3 3s., £5 5s., and £7 7s. respectively."

Needless to say, in a book of this scope, the subject of women's work in agriculture and gardening is also fully treated.

PRESENTATION TO MR. J. G. SHAND.—On December 17 a large number of gardeners of Lancaster and district met for the purpose of making a presentation of a handsome secrétaire to Mr. J. G. SHAND, of the firm of Messrs. W. SHAND & SONS, seedsmen and nurserymen, on the occasion of his recent marriage. The Chairman, in the course of a short speech, said the marriage-gift to Mr. SHAND had been subscribed by seventy gardeners of the district and one or two friends. He paid a high compliment to Mr. SHAND, remarking that they always found him ready to lend a helping hand and to say a kind word. Mr. FREAR, on behalf of the subscribers, said the present occasion gave them an opportunity of showing the goodwill and esteem in which they held Mr. SHAND, and the gift was intended as a small recognition of the many kindnesses received at his hands. Other members of the company bore testimony of the general esteem in which Mr. SHAND was held. Mr. SHAND, in accepting the gift, expressed sincere thanks to the subscribers. Mr. SHAND went on to suggest the advisability of forming a Gardeners' Association or Debating Society for the district, similar to those which had been formed in other parts; by this the members of the gardening craft could have many opportunities for meeting together for mutual exchange of opinions on matters

relating to their calling. Mr. SHAW supported the proposal to form a Gardeners' Association. It was decided to hold a meeting early in January to discuss the matter.

PUBLICATIONS RECEIVED.—From the Department of Agriculture, Central Experimental Farm, Ottawa, Canada, Bulletin No. 45, *Emmer and Spelt*, by Chas. E. Saunders; and No. 46, *Alfalfa or Lucern* (*Medicago sativa*), its Culture, Use, and Value, by Messrs. J. H. Grisdale, F. T. Shutt, and J. Fletcher; and No. 47, *Trees and Shrubs Tested in Manitoba and the North-West Territories*, by W. Saunders. — Virginia Agricultural Experiment Station, Bulletin No. 140, *Orchard Studies XIII. Some Observations on Crown Gall of Apple trees*, by Wm. B. Alwood. — *Vinton's Agricultural Almanac* (*Agricultural Gazette Office, Vinton & Co., Ludgate Circus*), contains a fund of information serviceable to farmers. — *Calvert's Mechanics' Almanac and Workshop Companion*. Contains industrial and interesting information for persons connected with trades. Price 4d. — *Agricultural Bulletin of the Straits and Federated Malay States*, August. Contents: Rubber in Ceylon, Fibre Plants of the Malay Peninsula, Preparation of Rubber, &c. — *The Agricultural Gazette of New South Wales*, November. Contains the Annual Reports of the various Departments; Seed, Wheat, and Fodder were widely distributed, and much work was done by Dr. Cobb in investigating plant diseases; Mr. Y. H. Maiden conducted the botanical work; and the viticulturist, Mr. Blunno, tested the powers of numerous phylloxera-resisting Vines. — *Annual Report of the New Zealand Department of Agriculture*, for 1904. The past season was good on the whole, though Oat-crops were practically ruined by rust. Fruit-culture, viticulture, and other industries made considerable progress. — From the New York Agricultural Experiment Station, Bulletin No. 251, *Vitality of the Cabbage Black Rot Germ on Cabbage Seed*, by H. A. Harding, F. C. Stewart, and M. J. Frucha. — Bulletin No. 254, *Fall Spraying with Sulphur Washes*, P. J. Parrott and F. A. Sirrine.

THE CHRISTMAS ROSE.

THAT the Christmas Rose, *Helleborus niger* (see (fig. 194) in its best varieties, is the most precious thing in winter-flowering hardy plants, is a fact that few, if any, will attempt to gainsay. Hardy and enduring to a degree, withstanding with impunity the great climatic changes of the British Isles, it is a plant to be highly prized, and it should be extensively cultivated for its intrinsic merit by all who appreciate the best of everything a garden may contain. Yet in spite of the many good attributes of the plant, and that it has been known to British cultivators for centuries, we look almost in vain for the goodly specimens that should exist in almost every garden. The hindrances to its cultivation are not great or even numerous, and in a large degree they are certainly not insurmountable. In smoky urban districts, where the atmosphere contains poisonous gases or smuts, the cultivation of the plant is less easy, and a fungoid disease sometimes attacks the foliage of these plants in all districts.

But even in rural England we do not see the plant in that abundance that its merits deserve, and there must be a reason for this. Here is one reason, which I cull from an important work on gardening: "The roots may be lifted and placed in gentle heat under glass, but they should not be forced much." Too frequently this is but the beginning of the end. Unfortunately, a similar dictum is recommended year by year also on the near approach of Christmas by most calendar-writers in the horticultural Press; and, if they practise what they preach, the mischief is widespread and the loss great. It should be known far and wide by all who profess to prize this precious winter flower that the plants lifted in the bud state, and placed in gentle heat, remain in a condition of rootless inactivity the whole time, the plant existing upon its own stores, the root-fibres meanwhile decaying by inches in a mass of wet soil, the moisture from which is not presented to the plant through the functions of the roots, but by the worst possible process of saturation.

Certain classes of plants, lifted from the open in much the same way, and potted for flowering, at once adapt themselves to their altered environment by issuing an entirely new set of root-fibres for the nourishment and sustenance of the subject. The Christmas Rose will not do this,

hence the losses which this periodical lifting entails. Not infrequently the gardener will account for the subsequent failure of the plants by saying these things are "most impatient of removal or disturbance"; and it is certainly a fact that this section of the Hellebore family does resent so makeshift a method as this. Perhaps the most remarkable thing of all is that the gardener who will take great pains to prepare many flowering plants for his use during winter ignores this fine plant altogether, trusting rather to luck to take the best available plants at the last moment. Surely so good a winter-flowering subject is worthy of due preparation, and until a more rational system of cultivation is adopted, the loss and the sacrifice for which the present method is responsible will continue.

One of the direct causes of the failure of these plants when lifted and put into pots at the end of the year is that the severed roots never again extend, but rapidly die back several inches. In this inactive state they remain until greatly enfeebled new roots issue simultaneously with the new foliage in spring, and the plants are deprived of the main or basal roots that are produced in early autumn. There is not the least reason why these Christmas Roses should not be seen in large healthy masses in our gardens, with spreading leathery foliage in tufts 2 feet or more across, or plants of the same size in tubs or pots. All that is needed is a system of intelligent cultivation in which the various details will be carried out at the right time. The Christmas Rose is a free-rooting plant, the chief roots descending to 3 feet deep, and more in thoroughly established examples. Anyone attempting to replant a giant specimen intact betrays his ignorance at the outset, and the plant might just as well be thrown on the rubbish heap. But at the end of August and onward into October, the earlier the better, the Christmas Rose may be pulled into as many pieces as can be provided with attached roots, and the ultimate result will be very advantageous to the plants. These divisions, with a couple of leaves, may be planted in the garden freely to form masses, or several may be planted together in a large tub or pot, those in the tub or pot being intended for introducing a year or more later into the cool greenhouse or cold frame for the purpose of providing Christmas Roses at Christmas time. During summer time the pot or tub examples should be plunged in the open ground and be given that attention in watering and feeding with liquid manure freely afforded to plants of lesser worth.

In the cultivation of this plant the gardener should aim to produce good and abundant foliage, and having secured this, flowers will surely follow as night follows day.

Speaking of the foliage of these Hellebores reminds one of the exceeding value placed upon it by such excellent cultivators of the flower as the late Chancellor Swayne, of Salisbury, and the late Latimer Clark, of Sydenham Hill. In the gardens of both these gentlemen huge masses of Christmas Roses were a feature each year, the leafage being regarded as most precious, and rarely touched for removal before it became unsightly. In the Sydenham Hill garden I had years ago charge of scores of plants whose diameter was not less than 3 feet in any case, and from which bushels of flowers could have been taken each year. How do the nearly leafless bits of to-day, with a discoloured flower or two at 4 inches high, compare with the above giants, which were all of the major variety? Yet the conditions for producing the plants are as favourable now as at any time, the chief essential being that cultivators must begin aright. As to soils, chalk is generally unsuited to these plants, and hot sand is not good. In sandy and clayey loams the plants may be grown to perfection. E. H. Jenkins, Hampton Hill.



FIG. 194.—THE CHRISTMAS ROSE (*HELLEBORUS NIGER ANGUSTIFOLIUS*): FLOWERS PURE WHITE. (SEE P. 4.8.)

ROMANCE IN COMMON PLANT NAMES.

THIS was the subject of an interesting lecture delivered by Professor Davidson to the members of the Natural History and Antiquarian Society, of which he is President, in the Botanical Class-room, Aberdeen University, on the 2nd inst. Professor Davidson said, referring to the works of Archbishop Trench, that he could quite well remember his charming little treatise, in which he pointed out the history enshrined in the study of words. Plant names had also wonderful stories of the past to tell. History and archaeology, folk-lore and social custom, poetry and religion, fable, myth, and superstition, were all here; and medicine itself had a distinct interest in the matter, if it would see itself faithfully presented, not, perhaps, as a primitive science, but as a primitive art. For instance, the fancy that saw a nest of young pigeons (*Columbine*) in the curved horn-like petals of the *Columbine*, thereby giving the designation to that plant, was obvious. Examples of that kind needed not to be dwelt upon, but he gave others of a less obvious class. He took an example that must be familiar to everyone who had ever enjoyed a country walk. It was the yellow wild-flower—*Lady's Bed-straw* (*Galium*). Perhaps in a term apparently so unpromising, little imagination need be looked for. Nevertheless, it was in reality full of sentiment and fancy. The word "lady" here, as in most other cases where it was applied to flowers, stood for "our Lady," and indicated that a flower was dedicated to the Virgin Mary. It thus carried them back to mediæval times, when the monks were the chief botanists, and to the religious faith of our forefathers. We were herein reminded of the humanising character of the old Romish priesthood. Science and religion then went hand-in-hand, and the agency that gave to the ignorant knowledge and instruction was the same that brought them also the light from heaven. "Bed-straw" also had a religious signification. It was not really "bed" but "bead," and was an allusion to the Roman Catholic practice of bead-counting. The stem, with its numerous little knots and whorled leaves, might readily enough suggest beads to anyone, and would most certainly do so to a mind dwelling on religion and [habituated to the use of the rosary. Here, then, was poetry connected with the piety of former ages, and opening up to them a wide field for thought and for reflection.

There was a name that might be taken by the unwary as similar in meaning to the "Lady's Bed-straw"—"Rosemary." As a matter of fact, however, "rose" here was simply the Latin "ros," which meant "dew," and "mary" was "mare"—the sea; so that *Rosemary* was just "sea-dew," a lovely name, bearing reference to the two-fold circumstance that the plant in question had a resemblance to the dew, and that its chief habitat was near the sea, but not witnessing to any pious use or service. The flower was emblematic of memory, just as *Forget-me-not* was of friendship, and *Violet* of love. How it came to be so was easily seen. The shrub was evergreen and highly aromatic, and its grateful odour abided with it—hence the meaning of *Ophelia's* sentiment, "There's rosemary, that is for remembrance; pray love remember."

Professor Davidson gave a large number of similar examples, explaining the signification of various names. As a concluding instance he dealt with the humble "Carl-Doddie." Jamieson told them that "doddie" meant bald. But, after all, Jamieson was not infallible, and "Baldman" or "Bald-carl" was a rather senseless designation for the familiar *Ribwort*. Was not the following better? Scottish children, as was well known, used the expression *Carl-Doddie* for a particular game. Pitting one *Doddie* against another, they played at soldiers, or "sodgers." Now, had they

not here the interpretation of the name? That game was one practised in Jacobite times by the soldiers in the army, as a pastime or amusement, and no doubt as a means of nursing or keeping alive their animosity—a repetition on a small scale, and with native genius, of what happened in the days of old before the walls of Troy, when *Palamedes*, with a similar end in view (namely, the diversion of the soldiers), devised the complicated and ingenious game of chess. A battle was supposed between the contending forces. One *Carl-Doddie* stood for the Jacobite Prince, the other for the Hanoverian Sovereign—one was "Charlie" and the other "Doddie," the familiar corruption of the English "George," and which ever succeeded in knocking off the other's head was declared the victor. From the rather disrespectful name of "Doddie" given to King George, one might not unnaturally infer that the game originated with the Jacobites.

There was romance, then, in common plant names, and the plants themselves that bore the names had, many of them, been the subject of poetic handling from the very earliest times. Chaucer, Spenser, Shakespeare, Milton, and Wordsworth revelled in the poetry of flowers. Burns and Hogg and the Scottish ballad writers sang sweetest when inspired by some field weed or untended plant of Nature. There was nothing finer in the English language than what had been written by those poets on the *Daisy*, *Celandine* and *Eglantine*, and *Primrose* and *Pansy* had each been the theme of the brightest effusions.

Nor was this all. The plant names themselves were full of imagination, and they bore evidence to customs and beliefs that were of great interest to the archaeologist and the student of the past. The subject, like the figure in old *Edzell Castle*, symbolic of logic or dialectic—a woman with two faces looking in opposite directions—looked either way. On the one hand, it had bearings on natural history; and, on the other, it had bearings on antiquarianism; and thus, looking this way and looking that, it was not unsuitable for consideration in that society, whose double title was the *Aberdeen Natural History and Antiquarian Society*.

GRAFT HYBRIDS.

INFLUENCE OF STOCK ON SCION.—I wish to draw attention to the influence the stock has upon the scion, and to the wide and interesting field for experiments there is open in this direction. We all of us know the influence the *Paradise Apple* stock, a wild form of *Pyrus Malus*, has on the Apple grafted thereon, but not so much is known of the now little used *Doucin* stock for "working" Apples on, and which brought the graft to a fruiting stage earlier than the *Paradise*. This stock was discarded owing to the slow growth the scion made on it. As a boy brought up amid horticultural surroundings and the proud possessor of a budding-knife, I did as many others have done, experimented by budding the rose on various impossible stocks; and hearing that our garden varieties of Pears would grow budded on *Pyrus Aucuparia*, I tried 3 or 4 varieties on some young *Mountain-Ashes* growing close by, with the result that a few grew and made feeble growth for 5 or 6 years, but only one kind as far I remember fruited, and this was *Jargonelle*, which carried two fruits.

One of the most interesting examples of stock influencing the graft happened to some orchard trees, probably twenty years planted. Several trees of the variety *Minchull Crab*, a large, firm Apple, and excellent for sauces, were not thought worthy to retain a position in the orchard, so were headed down, and grafted with the varieties *Tom Putt* and *Blenheim Pippin*. The vigour with which the grafts grew was quite astonishing, and in three or four years the trees bore no semblance to those of the same kind growing close by, and by the casual observer would have been pronounced entirely different.

Not only the growth but the fruit and fruiting propensities underwent a change in the case of *Tom Putt*; although the fruit grew larger and of a much deeper colour, it was lacking in flavour, while the crop was so diminished in comparison with trees of the same variety close by as to be scarcely worth gathering. These remarks apply equally to *Blenheim Pippin*.

In the South of England large quantities of standard Apples are grown by the cottagers and small landowners and farmers of the variety known as *Morgan Sweet*, an Apple in itself of fair market value and finding a good sale; but this Apple is not grown nearly so extensively for fruiting purposes as formerly, but is brought to the market in the shape of good big strong trees, with stems as thick as a man's wrist. It is of quick growth and is raised by thousands, making straight clean stems and superior-looking standards. The trees are readily bought by the farmers and land-owners, planted in the orchards, and when established "headed back" and grafted with the better-known market varieties. Whether this is going to prove a good or bad practice generally remains to be seen. I have, however, seen this stock so influence the scion of *Blenheim Pippin* grafted upon it as to alter the season of ripening by one month to six weeks, the fruits not keeping as long by that time. This I consider is accounted for by the quick active growth of the stock being imparted to and acting upon the scion, and likewise the fruit, which being grown quicker is of a more open and soft texture, and not capable of keeping so well.

I see no reason why the season of some of our best fruits should not be prolonged, so as to form a succession; for instance, working *Lady Sudeley Apple* on *Dumelow's Seedling* and *vice versa*; the intermediate scion in each case should be budded or grafted on to the *Crab* or *Paradise* stock, or both, for the sake of comparison. Again, some of our early Pears, such as *Souvenir du Congrès* or *Jargonelle*, would be very much more valuable to us could their season be prolonged by using *Glout Moreau* or some such grower as a stock. There are, of course, the possibilities of drawbacks in this mixing up of different bloods; an increase or decrease of fruitfulness may be the result, the flavour may be impaired or increased; the saccharine matter so deficient in some of our Pears, may be increased; the grittiness so objectionable in some kinds, rendering them almost worthless in different localities, may disappear; the colour and form with the change of stock all may undergo an appreciable change, as to a certain extent the Apple does on the *Paradise* and the Pear on the *Quince*.

Cellini Pippin Apple on some soils is very given to canker. I have seen scores of otherwise good trees spoiled by this parasite attacking the stems of young trees as they were growing in the nursery. A cure for this is said to be obtained by a change of stock, and on reliable authority I am informed that the *Northern Spy Apple* used as an intermediate stock will bring about this beneficial result.

The character of some of our Vines is changed by inarching, and the character of other fruits may likewise be influenced by similar means. Some growers, more especially those who cultivate trees for sale, will object to such proceedings, as the character of the fruits in some instances will be so changed that their identity would be rendered uncertain.

We all of us know what good, bad, and indifferent stocks are met with, upon which Peaches and Nectarines have been worked. At the present time I have a *Rivers' Early Nectarine*; it cannot be coaxed, it cannot be induced to grow satisfactorily, now it is doomed to destruction. Why is this? Because the stock and scion are not suitable to each other. Reliable nurserymen make the selection of stocks a subject of careful study, in order to ascertain whether such and such a variety requires to be budded upon the *Muskel*, *Brussels* or *Common Plum* stock. In some instances the buds utterly refuse to grow when inserted into stocks not suited to them, or will remain dormant for an indefinite period. In other stocks growth takes place which is apparently quite healthy for two, three, or more seasons; but eventually, if a sharp pull is given to the scion, it will part from its stock quite

readily; and upon close investigation it will be discovered that the union has never been properly made, only little, small, protruding growths of wood have held the bud to the stock. I have noticed this also to be the case with Plums, and in one particular instance the buds grew to the extent of 6 to 8 feet the first season, but subsequently the whole of the kind in question parted from the stock. This very same action of stock and scion may be witnessed in Roses, Conifers, hardy, deciduous, evergreen, ornamental trees, shrubs, Rhododendrons, &c.

In each case every variety must be worked upon the stock best adapted to its requirements. No nurseryman would bud a *Maréchal Niel* Rose on the *Manetti* stock, or any other Tea or *Noisette*, unless he courted failure. Hybrid Perpetuals readily grow on the *Manetti*, likewise also on the *De la Grifferaie* stock, on the seedling and cutting Briar as well; also on *Rosa indica*, a stock discarded through suckering so freely. Hybrid perpetuals will bud and flourish on any of these stocks. All Roses with a strain of the Tea-Rose in their constitution should be budded on to a Briar or on *De la Grifferaie*. Roses will grow when budded on the Sweet Briar, but not with that vigour noticeable on the common stock.

It is interesting to see how well all our best-named Lilacs grow either budded or grafted on the common Privet or on *Ligustrum ovalifolium*. I have seen *Osmanthus ilicifolius* united to the same stock quite satisfactorily. *Ribes Grossularia* is quite capable of finding a foster-mother on *Ribes rubrum* or *R. aureum*, but the time has not yet arrived when the Gooseberry is so influenced by the stock as to carry its fruit in bunches. I wonder if persistent and continuous interworking would be eventually rewarded in this direction. We know there is an affinity between the *Amelanchiers* and *Pyrus Aucuparia*; the latter, when standards are required, is beheaded and replaced by the former, the two growing admirably together. The great aim of the cultivator is to improve the constitution of the plant, to promote clean healthy growth, and at the same time to increase the duration of the tree, plant, or shrub operated upon, in the same way that the Vines in the French vineyards are worked upon American Vines to check the ravages of the phylloxera. Although we have not this insidious pest to combat, there is no denying that the action of stock over scion, and *vice versa*, is a study of the highest importance not yet fully understood, but very promising as to practical results. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

BEECHES AT SHIPLEY HALL, DERBYSHIRE.

THE Beech illustrated (fig. 195) is one of many fine Beeches which are growing in the pleasure grounds at Shipley, and which were, as far as can be ascertained, planted before the year 1703. I estimate them at about 210 to 220 years old, and the annular rings counted in trees that have been taken down approximate to this number. The tree illustrated was selected for this purpose in consequence of its isolation, and though it is a good example of a spreading Beech, it is not characteristic of the majority of the trees here, which have in nearly all cases long, straight, clean boles, remarkable for their excellent timber and for the whiteness of their bark.

It would be interesting to know the average age of Beeches grown in good soil. The question comes to my mind in consequence of the fact that a few of the trees here, presumably of the same planting, have shown signs of failing during the past six years, and two have died outright. The soil is fairly heavy, but lying as it does on "ratchel" it is exceptionally well drained, probably too much so for the good of old trees in long-continued dry weather. The trees from this planting approximate 120 feet in height, and I append a few measurements which may be of interest.

The tree illustrated girths 13 feet 10 inches at 5 feet from the ground, and 22 feet at the ground-level. Its branches have a spread of 110 feet, measuring across the widest part, and they spring from the main trunk at 11 feet from the ground.

Two other fine trees, with clean boles rising to about 40 feet before developing the main branches, which are in themselves of enormous girth respectively 13 feet 4 inches and 13 feet 2 inches at 5 feet from the ground.



FIG. 195.—A BEECH TREE AT SHIPLEY HALL GARDENS, DERBYSHIRE.

The most perfect specimen of a spreading tree, with a beautiful head all round alike, girths 11 feet at 5 feet from the ground, and has a branch-spread of just 100 feet. This latter tree appears to be from a later planting, and is quite away from the rest, and in a position that makes it difficult to obtain a photograph.

Still another specimen, standing in the main grove, is remarkable for its length of clean bole and its straightness, though not for its girth. It rises at least 60 feet without branches, and is an object-lesson in favour of close planting for clean, straight timber. *J. C. Tallack.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE BEST TWELVE APPLES.—I have read your census of Apples in the issues for Oct. 29 and Nov. 6 with great interest, and have come to the conclusion that your laudable efforts and infinite pains have been to a great extent wasted. They have brought out the fact that a number of your contributors have yet to learn the fine qualities

of some recent and other little-known Apples, and also the great diversity of taste that exists in estimating the relative value of flavour. Taken as a whole, your census strikes me as being more of a reply, supposing you had asked for a list of the most widely known and grown varieties, rather than the best six cooking and six best table Apples. Should you after ten years again publish a census, I would suggest that you omit all those which do not gain five votes, and thus avoid (what both growers of trees and the market buyers are wanting) that multiplication of kinds which is a source of loss to sellers, and except for show purposes is not desirable even in private gardens. Naturally you would retort:

"You nurserymen are the greatest sinners in that respect!" Yes; simply because clients will ask for sorts from sentimental reasons, and will not take our dictum that others are far better and ripen at the same season. And again, so many new kinds are put into commerce that we nurserymen are obliged to stock against our better judgment, because clients say, "Well, if you cannot supply 'Great Britain,' I will go to 'Jones' and get all the others I want." I could name a dozen sorts sent out in the past twenty years that are not nearly equal to older varieties. I have myself introduced a few which, after some years' trial, I have dropped, because others proved better. It is difficult also to separate Apples having a market value only, from those recommended for private use. I must take strong exception to Worcester Pearmain being honoured by a place in the first six table Apples. Where is the flavour or texture to warrant such honour? True it has made more money in the market than any Apple (except Cox's Orange) for some years, owing to its brilliant colour and its keeping in condition for a sufficient time to allow dealers to sell out before it spoils. Again, King of Pippins in the first six! To my mind it is a sweet mawkish fruit, which I cannot eat at all; but as a market fruit for October it has no equal (except Cox's Orange). Again the tree is very liable to canker, and I rank it only as a market variety, where its name alone sells it, just as "Williams" is often put to many other Pears to catch buyers. Personally I should not place Ribston Pippin in the six. It has a unique flavour, but is apt to be leathery and indigestible, and the tree is very subject to canker, though less so with trees worked on the Paradise stock. Regarding Blenheim Pippin note must be made that on standard trees it requires some fifteen years before a crop can be expected, and some six or seven years before bushes or pyramids on the Paradise stock fruit freely; yet although we tell amateurs of this, they will plant it and be disappointed, when they might get an annual and earlier return from other kinds. I grant in point of flavour it is first-class, and equally good in the kitchen. Irish Peach, too, in the first six! It is a bad grower, fruiting on the points of the shoots; and unless eaten fresh from the tree, flavourless and mealy; its earliness alone gives it value. It appears therefore that I can only admit Cox's Orange and Blenheim as worthy of a place in the first six desserts. The others I should "pass" would be Lady Sudeley for September, American Mother for October, Allington Pippin for November and January. This leaves us without any first-class dessert Apple for January to March. Adam's Pearmain, Claygate Pearmain, Duke of Devonshire, King of Tompkins County, Allen's Everlasting, and Scarlet Nonpareil would be my selection, taking into consideration habit of growth and cropping qualities. Now for the six cooking sorts. I agree with Lane's Prince Albert as the best as far as cropping quality and keeping go, but it is only suitable for growth as bushes or low trees on arable land. Warner's King is first-class. Lord Suffield is grand as far as the fruits go, but most liable to canker and to mildew on the foliage in any but a sunny season. In a long experience I have only seen it flourish in one place at Worthing. Even in Kent it is a complete failure. Ecklinville Seedling is the best all-round Codlin, sturdy in growth and very free in bearing. Bramley's Seedling is a fine grower and bearer, but is too flat and the eye is deeply sunken, leading to great waste in paring. A far better variety of same season, fertility and growth is Newton Wonder, the late market Apple of the future, and first-class on garden trees. Wellington or Dumelow's Seedling is no doubt the best cooking Apple grown, but it is very liable to be cankered in its growth, spotted in the fruit, and in a frost of 24 or more degrees the young "tip" shoots get severely cut, and Newton Wonder is a reliable substitute. For an early one to take the place of Lord Suffield I without hesitation say Grenadier, a first-class grower and a never-failing bearer. To make a sixth, then, for the Southern Counties I should take Bismarck, which behaves well as an orchard standard tree or as bushes on Paradise stock. For localities further north, on bushes Stirling Castle, or for orchards Lord Derby and Tower of Glamis. Having had a life experience of fruit, both in

gardens and orchards and with younger trees in the nursery, I trust you will not think me presumptuous in offering these remarks, as in compiling a list of so few as twelve kinds, I look not only to the fruits, but to their habit of growth, fertility, and general reliability, and I am quite confident that all those I have ventured to recommend will give planters every satisfaction. In estimating so few as the best twelve Apples, it is impossible to give sufficient variety to cover the entire Apple season (August to May), and, as before stated, market Apples have a separate value from those required for private use. I have often sent up first-class fruit the same day as a second-rate sort that had a market name, and had to accept, say 2s. 6d. a bushel for the former and 5s. 6d. or 6s. for the market sort. I might add that under the old rule of a majority vote at the Fruit Committee of the Royal Horticultural Society, many new sorts gained First-class Certificates and Awards of Merit which, in my opinion, were not worthy of recognition, and I am not alone in this opinion. Now it is necessary that a novelty should receive a two to one majority, and thus I trust the public will to a certain extent be protected from novelties which, although passable, are not really superior to varieties already in commerce. To sum up, therefore, my six best table Apples are: 1, Lady Sudeley (early); 2, Mother; 3, Cox's Orange Pippin; 4, Allington Pippin; 5, Blenheim Pippin; 6, Adam's Pearmain (late). Six best cooking Apples: 1, Grenadier (early); 2, Ecklinville; 3, Warner's King; 4, Bismarck; 5, Lane's Prince Albert; 6, Newton Wonder (late). These twelve varieties, although selected by a "Man of Kent," are suitable for any position in Britain. *George Bunyard, Maidstone, December 9, 1904.* [Our valued correspondent, Mr. Bunyard, took his share in the making of our census, and we append the names of the Apples he then voted for, which, it will be seen, are not quite the same as those in either of his present selections, which also differ from each other:—*Dessert:* G., O., Cox's Orange Pippin; G., O., Mother American; O., Blenheim Pippin; G., O., Devonshire Quarrenden; G., O., Allington Pippin; and G., O., Claygate Pearmain. *Cooking:* G., O., Wellington; G., O., Ecklinville Seedling; G., O., Lord Derby; G., O., Lane's Prince Albert; O., Newton Wonder; O., Tower of Glamis. The letters "G., O." stand for garden and orchard respectively. Ed.]

THE APPLE CENSUS IN 1883 AND 1904.—

It is interesting to note the positions occupied by some of the leading varieties of Apples in the *Gardeners' Chronicle* census taken recently, and in that taken in connection with the great Apple Congress held in the Royal Horticultural Society's Garden at Chiswick in 1883. After twenty-one years, the six leading varieties of dessert Apples undergo very little change one only, Kerry Pippin, falling out, to make room for Worcester Pearmain, the positions being, in 1883, King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Blenheim Pippin, and Irish Peach, in the order named. In 1904 they are Cox's Orange Pippin, King of the Pippins, Worcester Pearmain, Ribston Pippin, Blenheim Pippin, and Irish Peach. Then in each case Devonshire Quarrenden comes No. 7, and Sturmer Pippin goes from 8 to 9, Lady Sudeley taking the 8th place. Kerry Pippin has fallen from the 4th to the 11th place, I suppose because it is small, for there is no Apple that I know of that can equal it for flavour in its season, certainly not Worcester Pearmain. Among cooking Apples only three retain their places in the first six—Lord Suffield, Dumelow's Seedling, and Warner's King, the other three, Keswick Codlin, Blenheim Pippin, and New Hawthornden, giving place to Lane's Prince Albert, Ecklinville Seedling, and Bramley's Seedling. In 1883, Lord Suffield headed the list with 101 votes, and Lane's Prince Albert received only four; now the latter heads the list. Bramley's Seedling, which now comes fifth, was not in the first sixty then, this fine Apple, like Lane's Prince Albert, being one of the newer varieties. As regards the usefulness of the census, which some people have questioned, I think there can be no doubt that, when published in full, as in the *Gardeners' Chronicle*, it is exceedingly valuable, but when inexperienced

people read in other papers, as I have done, that certain Apples are the best sorts to plant, then disappointment will probably follow in many cases. Here, in the Vale of Evesham, one of the best Apple districts, the variety Lord Suffield is extremely capricious; many trees have been cut off and regrafted with varieties which suit the district better. My own Lord Suffields are the least satisfactory of any kind that I grow, and yet in 1883 it headed the list, and in 1904 it takes third place. Lane's Prince Albert also is not satisfactory with me; the trees grow and crop freely, but the fruit is undersized and does not colour well, while other varieties growing side by side with it and receiving the same treatment finish splendidly. Irish Peach, although in the first six for dessert, does not do quite well here, it is a moderate cropper, from its habit of bearing only on the ends of the shoots, and is deficient in flavour and colour, though it grows to a good size. It is much inferior to Beauty of Bath, Worcester Pearmain, and Lady Sudeley, all of which colour splendidly, and the two latter crop heavily. I think Allington Pippin will be certain to come to the front, it bears heavily here and the fruit is fine; indeed, some of the fruits from young trees have this year been almost too large for dessert, weighing over half a pound each. I have never had them so large before, and should be glad to hear if other growers have found them unusually large this season. *C. Myatt, Harvington, near Evesham.*

BOUGAINVILLEA SPECTABILIS.—Respecting Mr. Leach's note on p. 410 I have treated this species in various ways, treated it harshly, treated it kindly, ripened the growths thoroughly under glass, pinched it in small pots, and exposed it to the baking sun outside, but have not obtained a great measure of success. *Bougainvillea Warcewiczii* by some is claimed to be the same as *B. spectabilis*, and is certainly as shy in producing flowers as that variety, for it has flowered seldom since it was planted in the conservatory here, and now it tops the roof 20 feet high. The plant grows vigorously, the main stem being thicker than a man's wrist. I consider *B. braziliensis* to be one of the richest-coloured varieties I have seen. Some few years ago a plant was sent home to Lady Plowden from Algiers. It flowered the first season after arrival, the colour being of a bright brick-red; unfortunately, through mismanagement I was told, this plant died. The most abundant flowering and at the same time the darkest-coloured of the genus is *B. glabra*, "Coker Court variety," well worthy of a place in every garden. The raiser, Mr. Kidley, gardener at Nynehead Court, Wellington, Somersetshire, grows this variety well, and I once saw excellent specimens thriving and flowering most profusely on balloons out of doors. The individual bracts are not so large as some other kinds, but they completely hide the foliage. I think it would prove to be the best variety for planting in a bed, excelling even *B. glabra Sanderiana*. *Refulgens* is another beautiful variety, with extra long pendulous racemes, well suited as a roof-climber, perhaps needing more heat than some kinds. It is of a very rich purple-mauve colour. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

FOSSIL PLANTS.—I read with interest, nay, avidity, the remarks of your correspondent (p. 392) on "Palaeozoic Cones." Far and away too many forget that even in the British Flora we have still among us direct lineal descendants of those palaeophytes—those plants of remotest ancestry. The Mare's-tail, *Equisetum arvense*, the only living British representative of the carboniferous period, equally at home in the meadow or growing up through hard rolled gravel. Another interesting survival is the Japanese *Fusi-Kin-Go*, *Ginkgo biloba*, syn. *Salisburia adiantifolia*. This flourished contemporaneously with the iguanodon and the megatherium, millions of years ago. This very ornamental tree, with its characteristic foliage, is always effective and interesting; it is also an admirable town tree. Fine specimens are to be met with in the gardens at Dalkeith, Panshanger, and at Kew. The spectacle afforded by the wonderful energies prisoned within the compass of the microscopic hair of a Nettle (differing little from that seen in the membrane of a frog's foot) is not readily forgotten. When observed under

the microscope the protoplasmic layer of the Nettle hair is seen to be in a condition of unceasing activity, and undoubtedly gives off vibrations so rapidly as to be inaudible to human ears. As Huxley remarked, "The wonderful noonday silence of a tropical forest is, after all, due only to the dulness of our hearing, and could our ears catch the murmur of these tiny maelstroms, as they whirl in the innumerable myriads of living cells which constitute each tree, we should be stunned as with the roar of a great city." *M.A.*

AUDIT OF CHRYSANTHEMUMS.—The following twenty-four varieties of Japanese Chrysanthemums have proved themselves to be the most generally good this season. Their names have been taken from the winning prize stands of thirty-six of the principal shows in the country. I have given them in their order, with the number of times shown. It will doubtless be helpful to those just making a collection for exhibition purposes, and interesting to practised exhibitors. Included are the six best novelties of last season (according to the exhibits)—a guide for those requiring up-to-date varieties:—

Position.	Name.	Times Shown.	Position.	Name.	Times Shown.
1.	F. S. Vallis ...	92	13.	Madame Gustave Henry ...	21
2.	Bessie Godfrey ...	79	14.	Madame Carnot ...	20
3.	Madame P. Kadalci ...	58	15.	Miss Mildred Ware ...	19
4.	Mrs. F. W. Vallis ...	49	16.	M. V. Venosta ...	19
5.	W. K. Church ...	46	17.	Madame Nagelmachers ...	19
6.	Mrs. Barkley ...	38	18.	M. Louis Remy ...	19
7.	Duchess of Sutherland ...	35	19.	J. Lawrence ...	16
8.	Mrs. G. Milham ...	35	20.	J. H. Silsbury ...	15
9.	General Hutton ...	30	21.	Miss Elsie Fulton ...	13
10.	Maefking Hero ...	28	22.	Mrs. Bryant ...	12
11.	Mrs. Mease ...	27	23.	President Viger ...	12
12.	Henry Perkins ...	25	24.	Lady M. Conyers ...	12

The following are the six best newer varieties:—

Position.	Name.	Times Shown.	Position.	Name.	Times Shown.
1.	J. H. Silsbury ...	15	4.	Mrs. J. Hadaway ...	5
2.	Mrs. J. Dunn ...	8	5.	Beauty of Leigh ...	4
3.	Valerie Greculiam ...	6	6.	Maud du Cros ...	4

H. S. Kemp, Broomhill Gardens, Tunbridge Wells, Kent.

THE TRAINING OF YOUNG GARDENERS.—Two letters have appeared in the *Gardeners' Chronicle* lately under the heading of "The British Gardeners' Association," one from Mr. Divers on p. 333, the other from "J. G. W." on p. 411, which afford room I think for a little reflection, especially as both correspondents, in reviewing the training of young gardeners in the glass department, determine that, after all, the outdoor department is the chief part. This theory is not well founded, for in many respects the glass department is the vital machinery of the whole garden; not only has it to supply choice flowers for cutting, plants and fruit at all seasons, but during winter and spring the choicest vegetables and salads have also to be forced and produced in this department. Then, turning to the pleasure-grounds, almost the whole of our summer bedding as well as much other flowering plants for borders, &c., is the produce of this department. I do not wish to underrate the importance of outdoor gardening, but when we take into consideration the important place which the glass department takes in present-day gardens, we must not class it of merely secondary importance. Then as regards young gardeners and outdoor work, I may say, after many years' experience with them, that one seldom meets a young man who has not had a certain amount of experience in outdoor gardening; this I attribute to the fact that the great majority of young men met with in large establishments have received their earliest training in small or medium-size places, where the work is of a general and more all-round nature. "J. G. W." says that a false standard has arisen amongst gardeners; but this and a few more remarks adjoining it have no foundation, as with the reduced staff of labourers kept in most private establishments to-day, young gardeners have not to be so particular what they do now as they were thirty years ago. *W. C. R.*

—I was impressed by the remarks of "J. G. W." on p. 411 in regard to the training of our young men in the profession of gardening. In conversation with a smart young foreman some time ago on the subject of spade-work, he informed me with astonishing candour that he had never

taken a spade in his hand to work with in his life, and he hoped he never should. I ask, Is that man capable of taking charge of a large garden, or, indeed, of any garden? How can he expect to know whether men in the kitchen garden are doing justice to himself and to his employer, or whether they are almost breaking their backs by using big spades upon heavy clay? If a gardener has been in the position himself to know what it is to go home at night with sore hands and an aching back, he will be more able practically to point out to young men under him how to properly dig, trench, &c. I to-day may be found in one of the Orchid-houses carefully tending seedlings, seed-pods, &c., and to-morrow I shall count it no disgrace to be found with a spade at work in the kitchen garden or taking a turn at the pot-washing tub. The gardener I commenced with had for his motto, "The spade and not the potting-stick for youngsters." *C. Buckland, Braintree.*

JAPANESE LARCH.—Allow me to thank Dr. Augustine Henry for his information about the Japanese Larch and disease. Practically the tree up till now may be regarded as disease-proof. When Dr. Henry is in Scotland again perhaps he may be able to see the Japanese Larch at Mundies and Kirkennan, in Kirkcudbrightshire, about the oldest trees of the kind in Britain, and free from disease. May I ask if the examples submitted to Mr. Massee showed the fungus, or only the blister? What has puzzled foresters in many cases is the fact that blisters are found on the Larch without the Peziza, which is also found lively on quite dead branches long removed from the tree. *J. Simpson.*

THRUSH'S EGGS IN DECEMBER.—In tying up some Cupressus trees to-day which have been broken down by snow we discovered a thrush's nest containing three newly-laid eggs. This is I think an extraordinary thing for this time of the year. The weather here has been very mild until the last week or two. *J. G. Watson, Dilborne Hall Gardens, Stoke-on-Trent, December 13, 1904.*

THE LOQUAT.—I notice that Mr. J. Millburn, in writing at the time of sending a spike of flowers of *Eriobotrya japonica*, cut from a bush growing at Bath, says (p. 305) that he cannot hear of any instance of the Loquat having previously flowered out-of-doors. There is a large example growing near a wall at Enys, near Falmouth, which has frequently flowered, but has never perfected fruit. This is the only other case I know of, though the Loquat is fairly common in the South-West. The finest specimen that I am acquainted with is one in the Earl of Morley's garden at Saltram, near Plymouth. This is a tree 16 feet in height, with a branch-spread of about 15 feet. In *Gardeners' Chronicle*, December 19, 1903, fig. 163, p. 414, which accompanied an article on Saltram, this specimen appears in the centre of the illustration, flanked on either side by two Fan Palms (*Trachycarpus excelsus*) 15 feet in height. *S. W. Fitzherbert.*

CARNATION "FASCINATION."—Mr. Jenkins declares himself a member of the Floral Committee of the Royal Horticultural Society, and informs your readers that on the occasion when Enchantress was before the Floral Committee he stated emphatically that its correct name was Enchantress. We presume it was; at any rate it ought to have been. What we are concerned with is that he should express his opinion in respect of our novelty Fascination, which we bought, advertise, and sell as a novelty distinct from Enchantress and every other variety. Mr. Jenkins says it is not so. It has, however, been certified within the past two months (1) at Croydon; (2) at Royal Botanic Society's Show, Regent's Park; (3) National Chrysanthemum Society's Show, Crystal Palace; (4) Nottingham; (5) Bristol, at several of which places other members of the Floral Committee than Mr. Jenkins were among the judges. It has also been privately and verbally certified by most eminent growers of Carnations, among them the Duchess of Portland; Mr. Smeddys, of Hull (who in a voluntary testimonial says, "We are very much interested in Carnations, and thank you very much for showing us your novelty Fascina-

tion. We are growing here 5,000 pots, including 200 Enchantress [obtained, we are informed, direct from Messrs. Crane & Clark, the specialists whom Mr. Jenkins refers to], and are thoroughly convinced that they are two distinct varieties"; Mr. Wm. Robinson, of *Flora and Sylva*; the Secretary Midland Carnation Society; Mr. Lister, gardener to the Earl of Warwick (who is growing Enchantress), &c. The *Gardeners' Chronicle*, in describing Enchantress, said that they failed to detect any scent, whereas Fascination was specially commended for its fragrance at the National Chrysanthemum show by the Floral Committee, on the proposition of Mr. Blicke, gardener to Martin Smith, Esq.—no mean authority on Carnations. We could extend the list of such certificates at will; but one other instance will suffice to answer such opinions as those of Mr. Jenkins. We are only supplying the trade as a favour. We booked a largish order for Messrs. Jas. Veitch & Son, Ltd., given by Mr. Weeks, their Carnation specialist, at top retail prices, viz. 90s. per dozen. Between Mr. Jenkins and his opinion and that of Messrs. Veitch, let practical gardeners judge. Finally, we have not submitted Fascination to the Floral Committee for well-known reasons. Is it worth while for us to submit Fascination to the opinion of that body? We may however inform Mr. Jenkins that Fascination and Enchantress have been exhibited on the same stand. We have done so on many occasions; and we may also inform him that Fascination flowers have been bought this year from Messrs. Beckwith (the holders of the stock), and exhibited at the Royal Horticultural Society, named Enchantress. *Ambrose & Son (Jabez Ambrose, F.R.H.S.), Cheshunt, Herts.*

CARNATION "ENCHANTRESS" AND "FASCINATION."—I am glad Mr. Jenkins has called attention to Carnations that are too much alike, &c. In my own case I already possessed a large stock of the variety Enchantress (which I had not seen in flower), but when I saw flowers of "Fascination" last spring, I bought plants of it at four times the price I had previously given for Enchantress, and now, in my opinion, they are one and the same. I have applied for the difference I paid in the prices, and if this was done and enforced in all such cases it would put a stop to the system of sending out old things with new names. *John Robson, Altrincham.*

CARNATIONS "GLACIER" AND "MRS. S. J. BROOKS."—As a grower of Tree-Carnations I have had these varieties growing side by side for two seasons, and I cannot detect the slightest difference in them. Two months ago I named them all Mrs. S. J. Brooks. Messrs. Cuthbush will remember I wrote to them some time ago asking if they were one and the same variety, but they did not answer me. I cannot speak too highly of the variety Mrs. S. J. Brooks; it is grand with me at the present time, both on young and old plants, and the cuttings make roots unusually freely. Cuttings put in last January, topped once, and grown steadily on, have now made good plants, with from eight to twelve flowers and buds (disbudded) on them. The scent is delightful. *Henry Butcher, Winclety Park Gardens.*

THE PROPAGATION OF POTATOS.—I feel I cannot better assuage the strong feeling towards me exhibited by Mr. Cuthbertson and Mr. Deal in last week's issue, in relation to the report as to the cropping of Sutton's Discovery Potato from cutting-raised plants, and four other introduced varieties, also cutting-raised plants, than to quote a remark by Mr. A. Pearson, of Cork, at p. 422. "This note I trust may not be taken as denouncing any particular variety, but to show that what may be had in one locality or soil may be good in another." The inference to be deduced from the interesting experiments in relation to the effects of cutting or sprout propagation on certain Potatoes was, so far as I could see—and I saw the product with an absolutely impartial eye—that, as against the singularly robust Discovery, the four other varieties bought in as strong-rooted plants, and put out in the same ground, and under precisely similar conditions, seemed to lack vigour, and from six to eight weeks before Discovery was lifted, the tops of the latter being even so late as

the second week in November still green, the tops of the others had quite died away. I suggested in the article animadverted upon that the firm should apply a similar test to Northern Star,

June under the most favourable conditions, on the same ground as others were growing. Two of the plants died early, and from the ten remaining I lifted 8 lb. only. That was intensely dis-



FIG. 196.—AMARYLLIS BELLADONNA GROWING ON WARM BORDER, ROYAL GARDENS, KEW.
(From a photograph by Mr. C. P. Raffill.)



FIG. 197.—AMARYLLIS BELLADONNA.

Showing difference between the ordinary form to the right and the Kew variety to the left. (Much reduced.)

Eldorado, and some others, as bought-in plants seem to take unkindly to fresh positions. I had twelve comparatively strong plants of Eldorado sent me to grow for the National Potato Society. These came from close by. They were planted in

appointing. One 8 oz. tuber of The Factor from Rothesay gave me from one plant 17 lb. of fine tubers. A rather larger Northern Star, also from Rothesay, similarly treated, gave 1 lb. of tubers only. A. D.

THE KEW BELLADONNA LILY.

DURING the past season we had several opportunities of witnessing the beautiful display of *Amaryllis Belladonna* as grown on a warm border against one of the glasshouses at Kew. We are enabled to reproduce at fig. 196 a photograph by Mr. Raffill, which shows the plants in full flower. The variety cultivated at Kew is much better than the ordinary form. The scape and flowers are much larger, and the colour is of a deeper shade of rose. In fig. 197 the proportionate difference is illustrated.

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

DECEMBER 13.—Present: Dr. M. T. Masters, F.R.S. (in the chair); Dr. M. C. Cooke, Professor Boulger; Messrs. Saunders, Odell, Hooper, Massee, Worsley, Holmes, and Chittenden (Hon. Secretary). Visitors, Messrs. W. G. Freeman, Watson, and Hillier.

Eelworms in Mignonette.—Mr. SAUNDERS further reported on these:—1, The worms, after making their way into the plant, feed on the contents of the cells in the two plants from Hillingdon, both just at the point where the root ends and the stem begins, were hollow, and the cells round this space were much broken up with a number of eelworms working among them. 2, The presence of eelworms in soil cannot be ascertained except by careful examination under a microscope—a very tedious operation; the worms are so small that they are not visible under even a strong lens."

Fungus on Plum Stump.—Mr. HOOPER showed specimens of *Xylaria hypoxylon* from the stump of a Plum-tree.

Weed on Lawn.—Specimens of the troublesome lawn weed, *Prunella vulgaris*, were received from Sutton. It was recommended to manure the lawn with sulphate of ammonia or other nitrogenous manure to promote the growth of the grass.

Plants from Rhodesia.—Specimens of *Azalia enyangensis* and *Orchid Ansellia africana* were sent from Rhodesia for naming.

Oranges attacked by Scale.—Fruits and leaves of Orange badly attacked by the scale insect, *Aspidiotus aurantii*, were received from the British Vice-Consul at Seville.

Fruit of Jasminum officinale.—Ripe fruits of this plant, which rarely fruits in England, were shown by Mr. CHITTENDEN. The fruits were found at Chelmsford on a plant raised from seed ripened at Plymouth.

West Indian Fruits.—A number of fruits cultivated in the West Indies were shown and commented upon by Mr. Freeman, including the Papaw (from which papain is obtained), the Bread Nut, Pater Nut, Sapo dilla, and *Citrus medica*.

Canarina Campanula.—Mr. MOORE sent specimens of this plant, a native of the Canaries, in flower, from Glasnevin.

Diseased Agapanthus and Carnation.—Dr. COOKE and Mr. SAUNDERS kindly took these for further examination.

Dr. MASTERS congratulated the Committee on meeting for the first time in the new premises at Vincent Square, and made a statement with regard to the Henslow testimonial.

NATIONAL DAHLIA.

DECEMBER 20.—The Annual Meeting of the members of this Society took place on Wednesday afternoon last, at the Hotel Windsor, Westminster, the attendance being small.

Extracts from the Report of the Committee for the Year 1904.

THE past season, though less generally unfavourable than its predecessor, was in many respects a trying one for Dahlia growers. During the whole of the three summer months an absolute drought prevailed in most districts, and the early autumn was marked by successive cold snaps, which brought the season for first-class blooms to an unusually early close. The summer drought was accompanied by a troublesome visitation of black fly, which in some districts was so bad as to ruin the plants for bloom-producing purposes.

The Annual Exhibition was held on September 2 and 3, at the Crystal Palace. The number of exhibits

was below the average, but the quality of the blooms staged was distinctly above it, most noticeable being the marked advance in the Amateur Section in form and method of staging. This the Committee regard with gratification, as showing that their efforts to produce a useful work on the culture of the Dahlia for the guidance of members, have not been in vain. Eleven Certificates were on this occasion awarded to new varieties.

On September 20 a meeting of the Committee was held at the new Horticultural Hall, Vincent Square, on the occasion of the fortnightly show of the Royal Horticultural Society. Ten certificates were awarded to new varieties. The number of certificates awarded to new varieties in 1903 was nineteen, and in the present year twenty-one, out of a total of 125 seedlings exhibited.

First-class Certificates Awarded to new Dahlias in 1904 Show.

"Mrs. Hobbs," pure white (Hobbs).

CACTUS.

"Alexander," dark crimson, flushed maroon (Mor-timer).

"Antelope," yellow, suffused with bright salmon (Stredwick).

"Cockatoo," white, with canary-yellow base, outer petals changing to fawn (Keynes).

"Ella Kraemar," rosy-pink, with lighter base (Stredwick).

"Fairy," pure white (Stredwick).

"Harbour Light," orange-red, tipped flame-colour (Hobbies).

"Helen Stephens," yellow (Hobbies).

"J. B. Riding," rich yellow base, shading to deep orange (Stredwick).

"Jeannette," clear buttercup yellow (Shoosmith).

"Lord of the Manor," scarlet, with greenish-yellow base (Seale).

"Miss Dorothy Oliver," white, tipped green, with primrose base (Shoosmith).

"Rosy Morn," peach blossom, with paler base and centre (Keynes).

"Thomas Parkyn," light terra-cotta (Stredwick).

"Tricolor," lower half of petals pale yellow, upper half white, striped and speckled scarlet (Stredwick).

POMPON.

"Little Mary," deep crimson with darker centre (Seale).

"Neatness," salmon with yellow centre (West).

SINGLE.

"Dorothy," pure white margined rosy-crimson (Cheal).

"Mikado," crimson-scarlet with yellow band, edged red (Seale).

"Miss Bastone," white edged deep yellow (Seale).

"Unique," amber with crimson ring (Seale).

Financial Statement.

The income of the Society from all sources, including the credit balance of £17 9s. 5d. from the year 1903, amounted to £189 8s. 5d.; and the entire expenditure, including the payment of all prizes awarded at the Annual Exhibition, amounted to £166 3s. 11d., leaving a balance in the Treasurer's hands of £23 4s. 6d.

Arrangements for 1905.

The Annual Exhibition will be held at the Crystal Palace on Thursday and Friday, September 7 and 8.

A meeting will be held at the new Horticultural Hall, Vincent Square, on September 26, for the purpose of awarding certificates to seedling Dahlias. Entries will be received by the Hon. Secretary at the Horticultural Hall before 11.30 o'clock A.M. on the morning of the show.

Proceedings.

The Chairman (Mr. Ed. Mawley), in moving the adoption of the Report, which was carried unanimously, congratulated the Society upon its position at the end of another year, one which, owing to the general depression, had not been favourable for progress generally among societies. They had met with steady progress, still they should combine to do still better. The balance in favour of the Society was somewhat larger than the previous year's. The members must not forget the main aims of the Society, which are not only to hold a splendid show of Dahlias once a year, but in addition to foster a love of the flower all over the country. Securing the co-operation of amateurs throughout the country, who are needed on the committee and as exhibitors, should be a special aim of the Society.

Mr. Edwin Mawley was re-elected President of the Society, and the other officers were also re-elected, with the exception of the Secretary, Mr. V. W. Tullock, who, owing to the exigencies of business, felt it incumbent on him to decline the honour of being again nominated for the post. The Committee were unanimous in expressing regret at the loss of such a valued officer, and passed a hearty vote of thanks to Mr. Tullock for his past services. On the proposition of

Mr. Wilkins, seconded by Mr. Stredwick, Mr. H. L. Brousson was unanimously elected Secretary in the place of Mr. Tullock. Mr. H. Turner was again selected as the Society's Honorary Auditor. Mr. J. Hudson having resigned his post on the Committee, it was offered to and accepted by Mr. Tullock. Mr. H. Cannell, senr., having also resigned, the meeting unanimously elected Mr. Cannell, junr., to fill the vacancy. Mr. C. E. Wilkins was again elected to the post of Honorary Treasurer.

NATIONAL CARNATION AND PICOTEE.

DECEMBER 17. The annual General Meeting of the members of the above Society took place at the Horticultural Club on the above date, a goodly representation of lovers of the Carnation from all parts being present. The Secretary, Mr. T. E. Henwood, presented the Annual Report, which showed a rather serious falling off in the number of subscribers, due to various causes, one of those fluctuations experienced by special floricultural societies. There had also been a corresponding decline in the amount of the Society's income, which it is believed can be remedied by the efforts of members to bring in new subscribers, as the culture of the Carnation is certainly extending in all parts of the country.

The exhibition of 1904 was the first held by the Society in the new Exhibition Hall of the Royal Horticultural Society, and it was considered one of the best and most successful ever held by the Society. The quality of the flowers staged was of high excellence, many stands of blooms of great merit failing to obtain awards owing to the keenness of the competition. The number of exhibits was very large, and the attendance of persons interested in the Carnation most satisfactory.

The spirited offer made by Mr. James Douglas, to supply members of the Society with packets of his choice Carnation seed at half price, is accepted with warmest thanks, and the thanks of the Society are also given to the Council of the Royal Horticultural Society for their donation of £10 to the funds of the Society in 1904, and to the Horticultural Club for the use of their room for the business meetings of the Society.

The exhibition of the Society for 1905 will be held in the Horticultural Hall, Vincent Square, on Tuesday, July 8.

The Treasurer's statement shows that with the balance in hand at the commencement of the year, the receipts amount to £349 5s. 10d. In addition, the President, Mr. Martin R. Smith, gave as prizes three handsome silver cups—one in each of the three divisions into which the schedule is divided. A balance is carried forward of £114 0s. 11d.

Mr. Martin R. Smith was re-elected President. The eleven Vice-Presidents were also re-elected, with the additions of Sir J. T. D. Llewellyn, Bart., and Mr. Aubrey Spurling. Messrs. R. Morton, W. Parton, R. C. Cartwright, and A. H. Beadle were added to the Committee. The Auditors and Hon. Secretary were re-elected. Messrs. C. F. Thurstan and A. J. Rowberry were added to the Floral Committee, which now consists of nine members.

No alteration was made in the schedule of prizes, but the qualification for trade growers of plants in Division III. is now reduced from one thousand to seven hundred and fifty plants.

NATIONAL AURICULA & PRIMULA.

DECEMBER 17.—The members of the above Society held their annual general meeting at the Horticultural Club on the above date, there being a good attendance.

The twenty-eighth Annual Report recorded a slight decrease in the number of members during the past year, and issued an earnest appeal to lovers of the Auricula to increase the membership. There is also a corresponding falling off in the amount of annual subscriptions for the past year. Still, the Committee are able to record a balance in hand.

The exhibition in 1904 was held on April 19, and was in every way a success, reflecting the greatest credit upon the exhibitors. One satisfactory feature was the fine quality of the flowers exhibited by new members. The best thanks of the Committee were given to Mr. James Douglas for so generously presenting four medals for competition; also for his kindness in distributing choice seeds of Alpine Auriculas to the members. Thanks were also given to Mr. W. Smith, Bishop's Stortford, for the encouragement he gives to new exhibitors by providing the prizes in three classes specially set apart for such. The support given to the Society by the Royal Horticultural Society in giving a donation of £10 to the funds, and for the arrangements made to facilitate the staging of the flowers was also acknowledged, as was the kindness of the Committee of the Horticultural Club in allowing the business meetings of the Society to be held in their rooms.

The Treasurer's statement shows an income of £72 16s. 8d. for the year, including the balance in hand

on January 1. The expenditure was £71 16s. 9d., including £55 17s. 6d. awarded as prizes—a larger sum than in 1903.

The President, Vice-Presidents, and Committee were re-elected, with the addition of Mr. W. Bathgate Cranfield to the latter. The Auditors and Hon. Secretary (Mr. T. E. Henwood), who is also the Treasurer, were also re-elected. The schedule of prizes underwent some revision, and it was announced that Mr. W. B. Cranfield would give the 1st prize in the class for four Show Auriculas dissimilar; and Mr. P. Riddell 1st prize in the class for six alpine Auriculas dissimilar. Miss Willmott also continued her special prizes of one guinea; and Mr. James Douglas his gift of Medals.

The annual exhibition in 1905 is fixed to take place in the Horticultural Hall, Vincent Square, on Tuesday, April 25, the Council of the Royal Horticultural Society contributing the sum of £10 to the prize fund as before. Mr. Henwood was heartily thanked for his services as Hon. Treasurer and Secretary.

GARDENERS' DEBATING SOCIETIES.

BATH GARDENERS'.—The newly-formed self-help Society held a meeting and exhibition at the Foresters' Hall on Monday, Mr. T. Parrott, Chairman, presided. The Chairman announced that it was the intention of the Society to hold a Chrysanthemum Show on a large scale next November. They were glad to announce that Mr. C. T. Foxcroft had consented to become President of the Society. Introducing the subject for discussion, "Apples and their Culture," the Chairman thought they had chosen a most important subject to gardeners. A lengthy and interesting discussion ensued upon Apple-culture, the members especially devoting their remarks to kinds suitable for local soils. The Secretary announced that there were now over seventy members of the Society. The exhibits staged were of a very satisfactory nature.

HEADLEY GARDENERS'.—Mr. T. Beeson delivered an interesting lecture on "Vegetable Culture" on Tuesday, 6th inst. Mr. J. Murray, of Headley Grove, occupied the chair. The lecturer in introducing his subject stated that it was impossible to grow good vegetables unless the ground was in a high state of cultivation. Trenching, and, according to the nature and capabilities of the soil, ridge-formation, or any method of rough digging in autumn before the advent of winter frosts, were most beneficial. Constant stirring with the hoe was also a great factor in soil amelioration. The necessity for obtaining a succession of vegetables during the whole of the year made vegetable culture the most important department of the gardener's work. The lecturer gave in detail the different kinds of vegetables suitable either for a cottager's or a larger garden, also the best varieties for succession, with particular methods for preparation of the ground, manuring, &c.

(For continuation of these Reports, see p. x.)

POTATOS.

POTATOS TESTED AFTER COOKING.—Some time ago it occurred to Mr. Wm. Cuthbertson, of Messrs. Dobbie & Co., that a cooking test of Potatoes from different districts would be interesting. The co-operation of Mr. Wm. Deal, Brooklands, Kelvedon, and Mr. H. J. Jones, Lewisham, London, was secured, and the trials took place at Messrs. Dobbie's seed farm, at Marks Tey, on Thursday, 15th inst. It was decided that tubers should be obtained from Scotland, from Lincolnshire, and from Essex. A list of twelve standard varieties was agreed on, and six tubers, weighing as nearly as possible 6 oz. each, were procured. In the case of novelties, it was found impossible to procure some of them from all three centres. Messrs. W. W. Johnson & Son, Ltd., Boston; Mr. T. A. Scarlett, Edinburgh; Messrs. Wm. Davie & Co., Haddington; Mr. Wm. Deal, Kelvedon; Mr. J. Darien, Copford; Mr. H. J. Jones, Lewisham; Mr. Jas. Kerr, Dumfries; Messrs. E. W. King & Co., Coggeshall; and Messrs. Dobbie & Co., Rothesay, kindly supplied the required samples.

To ensure that the tests would be judged by independent men, Mr. George Gordon, V.M.H., Editor of the *Gardeners' Magazine* and Vice-President of the National Potato Society; Mr. H. Henshaw, of Cambridge University Experimental Farm; and Mr. T. A. Weston, Postling, Hythe, Kent, were invited to judge. The cooking was done by Mr. Ireland, Messrs. Dobbie's manager. Each sample of the different varieties was cooked in a separate pot. All were put on with cold water, and boiled slowly on a large hot-plate; they were steamed for a few minutes before being served. All were judged under numbers, the

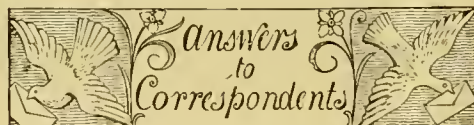
judges not knowing the names of the varieties they were dealing with, or the district from which they came, except in the case of the first lot, which was Up-to-Date. This was adopted as a standard, 9 points being given to the best dish of that variety. Samples receiving 9 points and upwards were considered "Excellent;" those receiving 7 and 8, "Good." The primary object of the trial was to ascertain if any varieties were "excellent" from every district, as this would be some guide to raisers of new sorts. The remarkable superiority of the cooking quality of the Essex Potatoes was a feature of the trial. The Scotch samples invariably received fewest points. The judges suggested a trial in spring, to find out if the Scotch tubers would then take a better place; they were altogether closer in the grain and flesh. The points awarded were as follows:

No.	Variety.	Total points.	Flavour.	Texture.	Appearance.
1	Up-to-Date ... Scotch	2			
2	do. ... Lincs.	9	4	3	2
3	do. ... Essex	7			
4	Evergood ... Scotch	2			
5	do. ... Lincs.	4			
6	do. ... Essex	6	2	2	2
7	Royal Kidney Scotch	3			
8	do. ... Lincs.	5			
9	do. ... Essex	7	3	2	2
10	The Crofter ... Scotch	9	4	2	3
11	do. ... Lincs.	6			
12	do. ... Essex	8			
13	The Factor ... Scotch	7			
14	do. ... Kent	7			
15	do. ... Essex	9	3	3	3
16	King Edward VII. ... Scotch	2			
17	do. ... Essex	9	3	3	3
18	Northern Star Scotch	6	2	2	2
19	do. ... Lincs.	2			
20	do. ... Essex	3			
21	Dalmeny Hero Scotch	9			
22	do. ... Essex	10	4	3	3
23	Charles Fidler Scotch	5			
24	do. ... Lincs.	9			
25	do. ... Essex	11	4	4	3
26	Empress Queen ... Scotch	5			
27	do. ... Lincs.	8	3	2	3
28	Daniel's Special ... Scotch	5			
29	do. ... Lincs.	6			
30	do. ... Essex	9	3	4	2
31	Davie's Warrior ... Scotch	5			
32	do. ... Kent	10	4	3	3
33	Duchess of Cornwall ... Scotch	5			
34	do. ... Lincs.	8			
35	do. ... Essex	10	4	3	3
36	Sim Gray ... Scotch	6			
37	do. ... Lincs.	5			
38	do. ... Essex	11	5	3	3
39	Eldorado ... Scotch	2			
40	do. ... Lincs.	4			
41	do. ... Essex	7	3	2	2
42	do. ... Kent	6			
43	Discovery ... Scotch	2			
44	do. ... Lincs.	2			
45	do. ... Essex	8	3	3	2
46	Conquering Hero ... Scotch	6			
47	do. ... Kent	7	3	2	2
48	Diamond ... Scotch	6	2	2	2
49	do. ... Lincs.	5			
50	do. ... Essex	5			
51	Highlander ... Lincs.	6			
52	do. ... Essex	9	3	3	3
53	20th Century Scotch	5			
54	do. ... Lincs.	9	3	3	3
55	Nobleman ... Wales	9	3	3	3
56	Peacemaker ... Scotch	9	3	3	3
57	The Provost ... Scotch	8	2	3	3
58	King Edward VII. (Kerr's) Scotch	8	2	3	3
59	Challenge ... Scotch	3			
60	do. ... Lincs.	7	3	2	2
61	Hector McDovald ... Scotch	7	2	3	2
62	Niven's Premier ... Scotch	9	3	3	3
63	Uncle Sam ... Kent	8	2	3	3
64	Vermont Gold Coin ... Scotch	7	2	2	3
65	Dobbie's Favourite ... Scotch	10	4	3	3
66	Table Talk ... Scotch	9	3	3	3
76	Peckover ... Cambs.	10	4	3	3

TRADE NOTICES.

MESSRS. GREGORY & EVANS, Sidcup.—After a partnership extending over twenty-eight years this firm is now dissolving, Mr. Gregory retiring into private life. It is several years since Mr. Gregory attended the market, yet there are many who still remember him when he was a regular attendant, and who will join in wishing him health to enjoy a well-earned rest. The firm has long enjoyed the reputation of being among the best growers of pot-plants for Covent Garden Market, and it is hardly necessary to say that Ericas are the leading feature, yet they also grow Ferns, Zonal Pelargoniums and many other subjects in very large quantities. They hold four or five stands in the market, and no other growers keep their stands better filled; and we believe they never miss a market when it is open for the sale of plants. Mr. Evans will carry on the business with the assistance of his sons, and with the new year the title of the firm will be Messrs. Evans & Sons.

MR. C. H. BUCK, an old student at Chiswick and at Swanley, has established a nursery under the name of the Tresco Nursery, at Britannia Road, Ipswich. Mr. Buck appends to his name the letters E.B.B.K.A., which internal evidence enables us to interpret as Expert of the British Beekeepers' Association.



BOOKS: *Subscriber.* There are two excellent books, and you cannot do wrong in selecting either; these are *Vines and Vine Culture*, by A. F. Barron, and *The Cultivation of the Grape Vine*, by W. Thomson. They are of the same price, and may be obtained from our Publishing Department for 5s. 3d. each, post-free. Mr. Barron's book is a very great help in the determining of varieties of Grapes, and Mr. Thomson's treats almost solely of cultivation.—*G. W. M.* You must state your requirements more fully, as we are unable to understand what you desire to know.

CUCUMBERS: *G. H. H. W.* See article on p. 446.

FERN-BLOTCH: *Pteris.* We can find neither insect nor fungus, but suppose the injury is due to drip or to fumigation, or imperfect ventilation.

FLOWER-BEDS: *R. H. C.* Your flower-beds being very small, should be planted with dwarf-growing varieties. Presuming the beds form a circle, we would suggest that you plant tuberous-rooted Begonias, putting one colour only in each bed, and arranging them tastefully. If the beds were of an even number, say twelve, you might have planted them with Begonias and Ivy-leaved Pelargoniums alternately. Of annuals, Tom Thumb varieties of Nasturtium are very bright and lasting, whilst Stocks and Asters may be recommended for small beds. If you had only six beds, and they were twice the size they are, a better effect would have been possible either by using the plants named above or taller-growing species.

GROUP OF CHRYSANTHEMUM PLANTS: *Secretary.* The wording of the schedule is indefinite and confused, therefore we are unable to offer any opinion as to what would constitute an infringement.

MARGUERITE OR MERCURY: *F. A. A.* Under this name the leaves of Good King Henry, Chenopodium Bonus Henricus, are sometimes eaten as Spinach. Mercurialis perennis is also called Mercury, but as it belongs to an order which has a bad character for its poisonous qualities, it will be better to refrain from using it.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers, still less to casual readers, to name either flowers or fruits. Such work entails considerable outlay, both of time and money,

and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at a time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe or nearly ripe specimens which show the characters of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in this issue are requested to be so good as to consult the following numbers:—*J. H.* 1, Tower of Glamis; 2, Winter Hawthornden; 3, Hanwell Sourcing; 4, Old English Codlin; 5, Sturmer Pippin; 6, Striped Beefing; 7, Royal Wilding; Pear, Ne Plus Meuris.—*J. Woods.* Pear decayed beyond recognition.—*J. Bubb.* A very nice shapely fruit. We do not recognise it, but it may be Baron Wolsley, a variety that was introduced by Messrs. J. R. Pearson & Sons.—*J. Merrick.* 1, Broadend Pippin; 2, Baddow Pippin; 3, Scarlet Custard; 4, Cullen; 5, not recognised; 6, Court of Wick.—*W. H., Surrey.* 1, Cat's Head; 2, Gravenstein; 3, Ribston Pearmain; Pears decayed.

NAMES OF PLANTS: See note under "Names of Fruits."—*Land.* 1, Scutellaria minor; 2, Centaurea Calcitrapa; 3, Euphrasia gracilis; 4, Scabiosa Columbaria; 5, Artemisia vulgaris.—*W. B. J.* 1, Salvia leucantha; 2, Dimorphotheca cuneata.—*Cranstone, Lælia Perrini.*

NOTICE TO QUIT: *G. W.* We are afraid you can only demand a week's notice, as there has been no formal appointment to the position vacated by the head gardener.

SEEDLESS APPLES: *W. B.* See the article on p. 446. We do not know of any way of producing these at will unless by prolonged selection; but once produced, they might be perpetuated by grafts or cuttings.

SULPHUR: *F. G. B.* Your employer need have no fears that vegetables obtained from land which has been dressed with flowers-of-sulphur will act medicinally on account of the sulphur that may or may not be taken up by the plants.

TENNIS COURT: *Bucks.* We have reproduced the diagrams of a tennis-court and croquet-lawn so frequently in these pages that we must refer you to a *Calendar of Garden Operations*, obtainable from the Publisher of this journal, at the price of 7½d., post-free. It contains directions for making the court and lawn, with illustrations.

THE EDITOR: *J. R.* We appreciate your kindness, and rejoice in your congratulations on the success of our efforts; but at present we do not see our way to adopt your flattering suggestion.

COMMUNICATIONS RECEIVED.—*J. R.*—*W. T.*, Gloucester, photo with thanks—*C. J.*, Preston, photo with thanks—*M. Yoshida*, Tokio—*W. Chaudler*.—*M. De W.*, Brussels—*M. Durand*, Brussels—*Prof. Waugh*, Mass., U.S.A.—*J. R.*—*M. F.*—*A. B.*—*J. F.*—*J. J. V.*—*Harrison & Sons*—*R. N.*—*Ambrose & Son*—*Barr & Sons*—*J. H. V.*—*Canon E.*—*F. C.*, Chelmsford—*Dr. Urbao*, Berlin—*T. Acton*—*F. F.*—*A. S.*—*F. A. A.*—*Dr. Henry*—*W. H. Clarke*—*W. H. Y.*—*A. Bullock*—*W. Miller*—*F. M.*—*Roy. Acad. of Art*—*G. W.* (too late)—*S. C.*—*G. P. Miln*—*T. Salisbury*—*Income Tax Reclamation Association*—*F. G. Brewer*—*H. W. W.*—*A. D.*—*J. C.*, Bagshot—*P. O. D.*—*A. Jeffries*—*E. Molyneux*—*P. Weathers*—*R. H. H.*—*W. H. A.*—*J. C. T.*—*R. L. C.*—*H. S. C.*, Kent—*Excelsior*.

CATALOGUES RECEIVED.

SEEDS.

JOHN K. KING & SONS, Coggeshall, Essex.
WM. FELL & CO. (Hexham), Ltd., Hexham.
DICKSON, BROWN & TAIT, 43 and 45, Corporation Street, Manchester.
JAMES CARTER & CO., 237, 238, and 97, High Holborn, London.
SUTTON & SONS, Reading.
JAS. VEITCH & CO., Ltd., King's Road, Chelsea.
W. J. WATSON, Ltd., Collingwood Street, Newcastle-on-Tyne.
COOPER, TABER & CO., Ltd., 90 and 92, Southwark Street, London, S.E.—Wholesale Catalogue.

MISCELLANEOUS.

FRANK LILLEY, Les Heches Nurseries, Guernsey—Chrysanthemums.
W. J. GODFREY, Exmouth, Devon—Chrysanthemums.
JOHN PEED & SON, Mitcham Lane, Streatham, S.W.—Roses.
KELWAY & SON, Laugport, Somerset—Gladioli (wholesale).

FOREIGN.

FREDERICK ROEMER, Quedlinburg, Germany—Flower Seeds.
CARL BECK & CO., Quedlinburg, Germany—Seeds.

(For Markets and Weather, see p. viii.)



VIEW OF THE BUSSEY BROOK, AT THE FOOT OF HEMLOCK HILL, IN ARNOLD ARBORETUM, MASS., U.S.A.



THE Gardeners' Chronicle

No. 940.—SATURDAY, Dec. 31, 1904.

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THE MEDITERRANEAN IN DECEMBER.

BY CORYCIUS SENEX.

FLYING southward, like the swallows, (except that swallows have neither to pack nor to unpack, elude trains and steamers, are independent of Italian cookery, and make short work of Sicilian mosquitos,) the English horticulturist, if untravelled, enjoys a series of surprises; for he recognises trees and herbs known to him hitherto in books, or seen only under glass, as they stand up, native, green, defiant, in the *ver longum tepidasque brumas* of the sunny South.

The brown-podded Catalpas of Zurich, the fields of Maize-stalks, the Almond and Peach plantations, the trellised Vines on Mulberries, I had seen before, and, as pious Wordsworth says of the angelic host, "I pass them unalarmed," only noting that in old Roman days they would have been trained not on Mulberries but on Elms. Milton, we remember, echoing countless passages in Virgil and in Homer, tells how "Eve and Adam," gardening in Paradise—

"Led the Vine

To wed her Elm; she, spoused, about him twines
Her marriageable arms, and with her brings
Her dower—the adopted clusters, to adorn
His barren leaves."

My first thrill responded to the dark pillars of the Cypress, recalling Goethe and

Byron, poor Wilfrid's song in *Rokeby*, and the pathetic stanza in which Horace bids the rich man remember while he decorates his garden that of all the trees he plants the sullen Cypress alone will follow its short-lived master to the grave. In the Apennines we meet our earliest Olives; they rapidly increase in size and number as we go on; round Syracuse are some of the largest in the world, larger, it is said, and not less ancient than the eight famous patriarchs in the Gethsemane garden. They are manured by great holes dug around their roots and filled with decaying rags mixed with mineral phosphates. In the marshy land near Ravenna we found rice-fields, and under its famous Pine woods, now somewhat dwindled, was growing wild in thick bushes the *Pyraecantha* of our gardens. The colossal thirteenth-century walls of Perugia and Assisi showed me for the first time the Caper, Solomon's Hyssop, springing out of the wall. In the Tiber valley we came across the *Eucalyptus Globulus* as a forest tree, with willow leaves, white blossoms, and clean, smooth bark.

Amid the dead marvels of the Roman forum I was not too much absorbed to notice with pleasure a mass of *Acanthus* bordering the spring where Castor and Pollux watered their horses after the battle of the Lake Regillus, or the green fringes of Maidenhair which grace the foundation stones of Vesta's Temple. Waking in the morning after a night in the sleeping cars, as we neared Reggio, the "Rhegium" of St. Paul's journey, first smoking Stromboli, and then Vulcano on our right, we found around us endless plantations of Tangerine Oranges, and saw now for the first time the weird Prickly Pear (*Opuntia ficus indica*), a weed in Southern Italy and Sicily. It forms a hedge, not very stubborn in appearance: press through it and it fills your trousers with thousands of lively needles stinging like a hive of bees. They are ineradicable; you may burn the garment, or send it to a jumble sale, keeping well out of the way of the confiding labourer who buys it.

Our delight culminated in Sicily. Here the Orange fields were succeeded by Lemon groves, amid which stand white and ghostly the large Fig-trees, denuded of their leaves. The cultivation of the southern part is extraordinarily good, the steep hill-sides are "terraced high with mossy stone," an expensive process, since if heavy rain causes any part of a wall to bulge the whole must be taken down and rebuilt. But these are large estates, belonging to rich signors, Lord Bridport's Nelson and Brontë heritage amongst them, and droves of labourers are employed.

The historical interest of Syracuse is too great to admit of more than cursory botanising within a limited time, but amongst the vast quarries in which the hapless conquered Athenians after the siege were maltreated or starved to death, plant life is luxuriantly developed. Besides the grey Olives and the feathery "Pepper" trees (*Schinus Molle*), with coral berries, were Loquats (*Eriobotrya japonica*), great Carob trees, whose husks were given to the prodigal son to eat; Acacias, with their small, yellow, globular flower-heads, along with Stone Pines and Palms, the pretty *Casuarina tenuissima*, the ground beneath them blue with *Iris persica*, and carpeted with *Eryngiums*, Candytufts, great

Arums, Marigolds, and a lovely Arum (*Arum arisarum*). Round the "Ear of Dionysus" hung Milton's gadding wild Vine; in the Fountain of Arethusa, rippling still to mark the emergence of the nymph whom Achelous chased, grows the tall Papyrus, a present from a Ptolemy to a Hiero, extinct now in the Lower Nile, but still flourishing in Sicily.

It is at Palermo that the beautiful island of Theocritus and Virgil shows its best—Palermo, the loveliest place, say world-wide travellers, outside the tropics, finer than anything in New Zealand or Japan. I sat and walked in the hotel garden without an overcoat on a December day amid Agaves and Yuccas in bloom, between hedges of Bougainvillea. *Convolvulus mauritanicus*, *Plumbago*, Scarlet Hibiscus, *Pelargonium* in August colouring, and *Poinsettia* flowered on low hard-wooded trees; gorgeous blue *Nymphaeas* floated in a tank, and the rocks were clothed with *Mesembryanthemums* to the water's edge, while the bay was horizoned with weird volcanic hills, showing through gaps the snow-powdered mountains behind. And here came our only disappointment. A single week of unkind weather at Naples and Messina blotted out the tops of Vesuvius and Etna; we saw their snowy sides, and, except for an instant in each case, that was all. In certain of the Italian railway carriages appears the edict, "Vietato Fumare"—Smoking Forbidden; the prohibition would appear to have been extended to the two great volcanoes.

Not even Palermo can spoil the Riviera journey from Genoa to Toulon—a succession of deeply blue bays, whose shores are lined with white hotels and villas, and backed by richly wooded hills. Near San Remo, where the Emperor Frederick retired to die, we pass through groves of Palms, grown under Papal monopoly for the Palm Sunday decorations at St. Peter's. At Monte Carlo we drop gaily dressed ladies and gentlemen going in for a day at the tables. As we approach Nice, and far beyond, the road is lined with endless Carnation-beds, flowering for the winter markets, sheltered with mats, which are rolled on frames for protection against rain. Two miles from the town, at Cimici, in the Vallon des Fleurs, in late January the ground is for miles thickly carpeted with Hepaticas. Further on, but visible on its hill, is Grasse, from early spring-time onwards a wilderness of successive sweets, whose perfumes, distilled and sent to Paris, yield annually five million francs. The petals of *Heliotrope*, *Jonquil*, *Violet*, *Jasmine*, *Hyacinth*, *Tuberose*, are carefully plucked by women, pressed between layers of lard until they have imparted to it all their fragrance, then washed in spirits of wine. There are special manufactories for lavender, which, profusely growing wild, gives a name to Le Lavandon, on the narrow-gauge line of the Sud-France, between St. Raphael and Hyères. Here too is prepared the so-called attar of Rose, while the Orange flowers yield *Néroli*, from which eau-de-Cologne is made—made in perfection only by one firm, which carefully preserves its secret and guards its trade-mark.

At intervals as we shoot along come Cane-brakes (*Arundo Donax*), giving its name to Cannes. The Myrtle and the Mediterranean Heath (*Erica arborea*) reach in places a height of 20 feet; from the last, known as Bois de Bruyère, are

made the "Briar-wood" pipes. Everywhere is the pretty southern *Cistus*, of which there are many kinds; now and again Cork forests, enormously profitable, but liable to ruinous conflagrations. In two spots are natural forests of the Umbrella Pine (*Pinus Pinea*).

At Hyères we visited the public gardens, under the guidance of the veteran M. Nardy, to whom the *Gardeners' Chronicle* has been more than once obliged. He showed us a remarkable collection of *Aralias* and *Bonaparteas*, splendidly-grown specimens of

cicadas and its nightingales, but a region growing gradually more remote from baking sun, from Palms and Oranges and Agaves first, then from Olives, Mulberries, Cypressess, and Vines.

With store of memories laid up for life-long food, with associations illuminating books often before read, never yet entirely appreciated, we return to the smoky fogs and the business cares and the ceaseless roar of London—"fimum et opes strepitumque Romæ."

Bracts mostly reflexed, longer than the pedicels; peduncles and racemes stiff and long.

VIII.—VERÆ.

Ex.: *Aloe vera*, *Aloe vacillans*, *A. chinensis* (*Botanical Magazine*, t. 6301), Abyssinia, Arabia, Mediterranean region, &c.

Racemes short, capitate.

IX.—CERNUÆ.

Ex.: *Aloe capitata*, Baker (= *A. cernua*, *Todaro*). Madagascar.

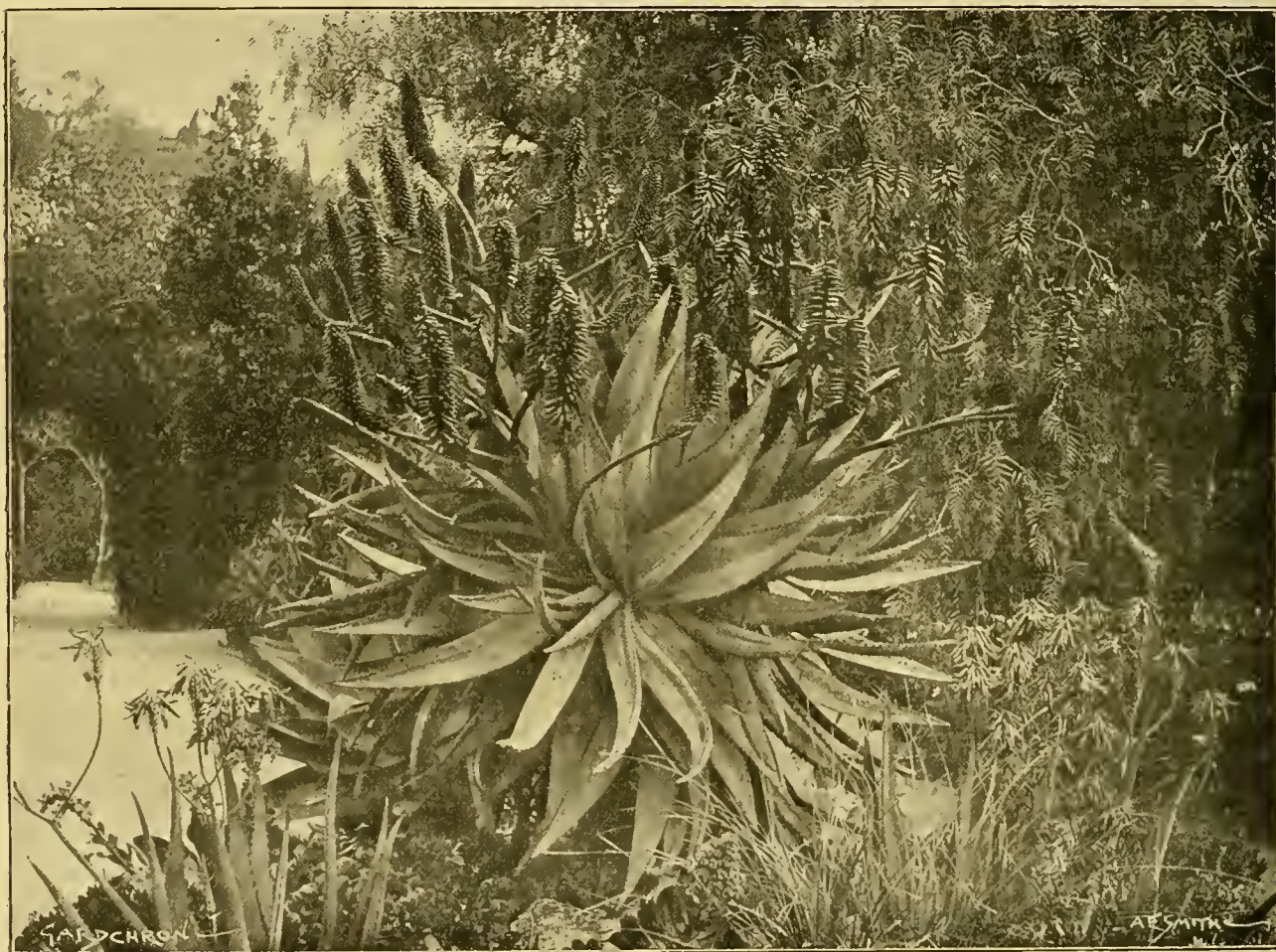


FIG. 198.—*ALOE SUPRALEVIS* IN THE GARDEN AT LA MORTOLA.

See Group XIX. in "Notes on the Genus Aloe."

Pritchardia filamentosa, fine trees of *Diospyros virginiana*, *Arancaria Bidwilli*, immense Bamboos, the curious *Schinus Molle*, and the rare *Chamærops humilis*, whose leaves resemble tin and rattle metallically.

Returning from our stroll, we found some of our party sitting under a tall *Eucalyptus*, in fragrant bloom, and as musical with bees (on December 18!) as an English Sycamore in June. Round us as we drove, and everywhere outside Toulon, we saw fields of *Narcissus* (white and yellow), the women gathering for market, with already a few of the red *Anemones*, and abundant *Immortelles* not yet in flower.

From Marseilles began our northward journey, through the curious stony desert of La Crau, tufted with Wormwood, and said to be haunted by flamingos. We crossed the broad Rhone into a region famous for its

NOTES ON THE GENUS ALOE.

(Concluded from p. 421.)

VI.—PERCRASSÆ.

Ex.: *Aloe percrassa*, *Todaro* (not of Schweinfurth!) from Abyssinia.

Perianth at the base conically stipitate. Cauliscent when old.

Leaves with smooth epidermis.

Racemes elongate.

Bracts erect, adpressed. Perianth slightly constricted above the ovary, trigono-cylindrical.

VII.—GRANDES.

Ex.: *Aloe Peacockii* (= *A. elegans*, *Todaro*, and *A. Camperi*, *Schwartz*), *A. Schweinfurthii*, Baker (in *Botanical Magazine*, t. 7667), *A. abyssinica*, &c. To this group belong many plants from Tropical West and East Africa, and the Islands.

Leaves with a rough epidermis; racemes elongate, bracts with a long cusp.

X.—ASPERIFOLIE.

Ex.: *Aloe falcata*, Baker, not yet introduced. South Africa.

PLANTS CAULESCENT, stems slender, elongate, often sarmentose. Leaves remote, the sheaths visible, often striped. Bracts acute.

Leaves succulent, from ovato-deltoid to lanceolate, with stout prickles on the margin.

XI.—MITRIFORMES.

Ex.: *Aloe mitriformis* (*Botanical Magazine*, t. 1270, 1362), *nobilis*, *Brownii*. South Africa.

Leaves thin, elongate with minute teeth. Flowers on very short pedicels.

XII.—STRIATULÆ.

Ex.: Aloe ciliaris, tenuior, striatula. South Africa.
Leaves succulent, ensiform, often maculate.
Bracts minute, subulate.
Racemes simple, pedicels short.

XIII.—MONOSTACHYÆ.

Ex.: Aloe Cameroni, Hemsley (*Botanical Magazine*, t. 7915). Tropical Africa.
Racemes with slender and spreading branches.

XIV.—PLEUROTACHYÆ.

Ex.: Aloe Hildebrandtii (*Botanical Magazine*, t. 6981). Tropical Africa and Madagascar.
Bracts larger, deltoid to lanceolate. Inflorescence simple or branched, racemes elongate.

XV.—FRUTICOSÆ.

Ex.: Aloe pendens, Forskahl (*Botanical Magazine*, t. 7837); A. confusa, Engl.; A. concinna, Baker. South Africa, Tropical Africa, Arabia.

PLANTS ARBORESCENT, stems simple or richly branched from the base, or irregularly from the side of the stem. Leaves ensiform. Peduncle simple or branched, with large, obtuse bracts. Perianth straight. Stems short, peduncle simple.

XVI.—PURPURASCENTES.

Ex.: Aloe purpurascens and A. succotrina (*Botanical Magazine*, t. 472). South Africa.
Arborescent, peduncles often branched. Stamens not conspicuously exserted.

XVII.—ARBORESCENTES.

Ex.: A. arborescens (*Botanical Magazine*, t. 1306), pluridens. South Africa.
Stamens long exserted.

XVIII.—PRINCIPALES.

Ex.: Aloe Salm-Dyckiana, A. speciosa, A. rubro-violacea, Schweinf. (*Botanical Magazine*, t. 7882). South Africa, Abyssinia, and Arabia.

PLANTS ARBORESCENT, stems simple or dichotomously branched.

Leaves spirally disposed. Perianth more or less recurved, and stamens exserted.
Perianth tubulose.
Bracts obtuse (not subulate), reflexed.

XIX.—PACHYDENDRON.

Ex.: Aloe ferox, supralævis, africana, South Africa.
Bracts subulate.

XX.—ALOIDENDRON.

Ex.: Aloe Bainesii, Dyer (*Botanical Magazine*, t. 6848; *Gardeners' Chronicle*, May 2, 1874, p. 569). Natal, Caffraria.
The tallest Aloe, 40—50 feet.
Perianth with segments nearly bilabiate.
Bracts subulate.
Leaves 15—25 cm. long.

XXI.—DRACALOÆ.

Ex.: Aloe dichotoma, L. fil. From Germau South-west Africa, &c.
Bracts ovate.
Leaves 60—100 cm. long.

XXII.—SABÆALOÆ.

Ex.: Aloe sabæa, Schweinf. South Arabia.
Leaves strictly distichous, lorate, obtuse.
Peduncle simple, perianth straight, stamens included.

XXIII.—KUMARA (Rhipidodendron).

Ex.: Aloe plicatilis (*Botanical Magazine*, t. 457). Cape of Good Hope.

I do not pretend that the groups proposed here for the first time will hold good for ever. So long as most of the species are only known from more or less incomplete herbarium fragments, the question of their natural relationships cannot be finally settled. This will only be possible in an establishment like the gardens of La Mortola, where all these plants are grown and can be compared with each other. Probably more groups will have to be defined, but I am convinced that many intermediate forms will finally show the impossibility of maintaining the four sub-genera.

The importance of Aloes as ornamental plants is perhaps nowhere more appreciated than on the Riviera. How beautiful they are in their vivid colours from winter to spring everybody will remember who has ever seen our garden at this time of the year. *Alwin Berger, La Mortola, Ventimiglia, Italy.*

fronting the grotto I came on to the carriage-drive flanked on each side with raised beds and belts. There are scores of these beds and belts, and at this part the pleasure-ground recedes into a semi-wilderness on the north side, with the meadows beyond; but when the trees and shrubs become bigger the ground will present a different appearance. In the raised beds and belts masses of such plants as Rosa rugosa, Purple Plum, and Sea Buckthorn were planted; also Cotoneaster Simonsii, Yellow Broom, Berberis, Andromeda floribunda, choice varieties of Rhododendron, Pernettya mucronata, Spiræa "Anthony Waterer," Skimmia japonica, and many others; and dotted about here and there were Cupressus Lawsoniana, Juniperus sinensis aurea, Golden Privet, Cryptomeria elegans, Thuypopsis borealis, and Golden Yew. I name these because they were all in such a healthy condition, that I did not expect to see in such a cold and bleak district.



FIG. 199.—WITHNELL FOLD, THE RESIDENCE OF H. T. PARKE, ESQ.

WITHNELL FOLD.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS is the Lancashire residence of H. T. Parke, Esq., J.P., and is about 5 miles from Chorley, but the nearest station is Brinscote, about 2 miles distant.

The former mansion, though not old, was recently pulled down and an imposing structure [see fig. 199] has been erected on the highest part of the ground. Having reached the gardeners' cottage, surrounded with its lawn, shrubbery and flower-beds, I was conducted into the newly-made pleasure-ground over a rustic bridge spanning an artificial stream feeding the lake. The first object to attract attention is a stretch of artificial rock-work with a grotto in the centre forming part of an embankment supporting the carriage-drive; it recedes to each end till it runs out. This is the work of Messrs. Pulham, of Broxbourne; and Mr. Drinkwater, the gardener, has very tastefully planted it with suitable species. Aubrietia Leichtlinii and others and Heuchera sanguinea were succeeding well, whilst in the ordinary herbaceous border here Heuchera sanguinea has died after two trials. Pernettya mucronata was also very fine, as were the Genistas, Saxifragas, and many other species. Winding my way upwards along the walk

On the front of the mansion I noticed a fine specimen of Ceanothus Veitchii profusely flowered. Other plants were Escallonia macrantha, Wistaria sinensis, and varieties of Ivy, but the structure being built mainly of Ruabon bricks, even Ivy will not cling to it, and everything has to be secured with shreds. If anyone suggested to Mr. Parke that this practice would after a time deface the building, he would most likely reply that it would be then time to pull it down and build another in order to employ labour. On the south side of the mansion there is a tennis-lawn, with the lake beyond it a little to the east. Proceeding north, I came to the croquet-ground and sunk garden, planted with Rose trees, the banks being covered with a collection of herbaceous plants. Near to this spot is another extent of rockwork, and moving a little further the open field is seen again, which in a few years will be completely hidden, and the ground will be sheltered well from north winds. The original pleasure-ground was five acres in extent; and twelve acres more have been recently added to it, Mr. McLean, of Derby, being the landscape gardener employed.

The kitchen garden lies to the south-east of the mansion, and is separated from the pleasure-ground by a hedge of Holly, fronted on the pleasure-ground side by a shrubbery border. Just

inside the kitchen garden there was a lovely bed of mixed varieties of *Anemone coronaria*, such as I have not seen in Lancashire.

Only a few choice early vegetables are grown in the kitchen garden, the others are cultivated in another part of the property. In a sunken space, so treated to provide shelter, for the district is notoriously cold and bleak, were 500 *Chrysanthemums* for various purposes. Mr. Drinkwater is one of the leading prize-winners at the Chorley shows.

The glasshouses are twenty-one in number, and are on the west of the kitchen garden. The

may be entered from the stove and at right angles to it, which contained *Odontoglossums*, *Cypripediums*, double-flowered *Begonias*, *Gloxinias*, &c. There is also a house for *Cattleyas* and others for *Coelogynes*, *Vines*, *Peaches*, *Melons*, and *Cucumbers*.

The bothy is just outside the garden, and contains apartments for the caretaker, and sufficient rooms for the use of the gardeners, with lavatory, a bath-room, &c. There are six bedrooms, three on each side. Close by is a well-fitted reading-room and a billiard-room, &c. The main portion of the village, which is very near,

The Week's Work.

THE FLOWER GARDEN.

By A. B. WADDS, Gardener to Sir W. D. PEARSON, Bart., Paddockhurst, Sussex.

Pyrus Malus floribunda and *P. baccata*.—These are among the best flowering shrubs and climbers. They are suitable for cultivation on arches, or as bushes or standards; also for covering walls or training into any device or shape required. The plants will flower in any position where there is sufficient sunshine to mature the wood. *P. baccata* (Siberian Crab) forms small, Crab-like fruits in the autumn, but they are only

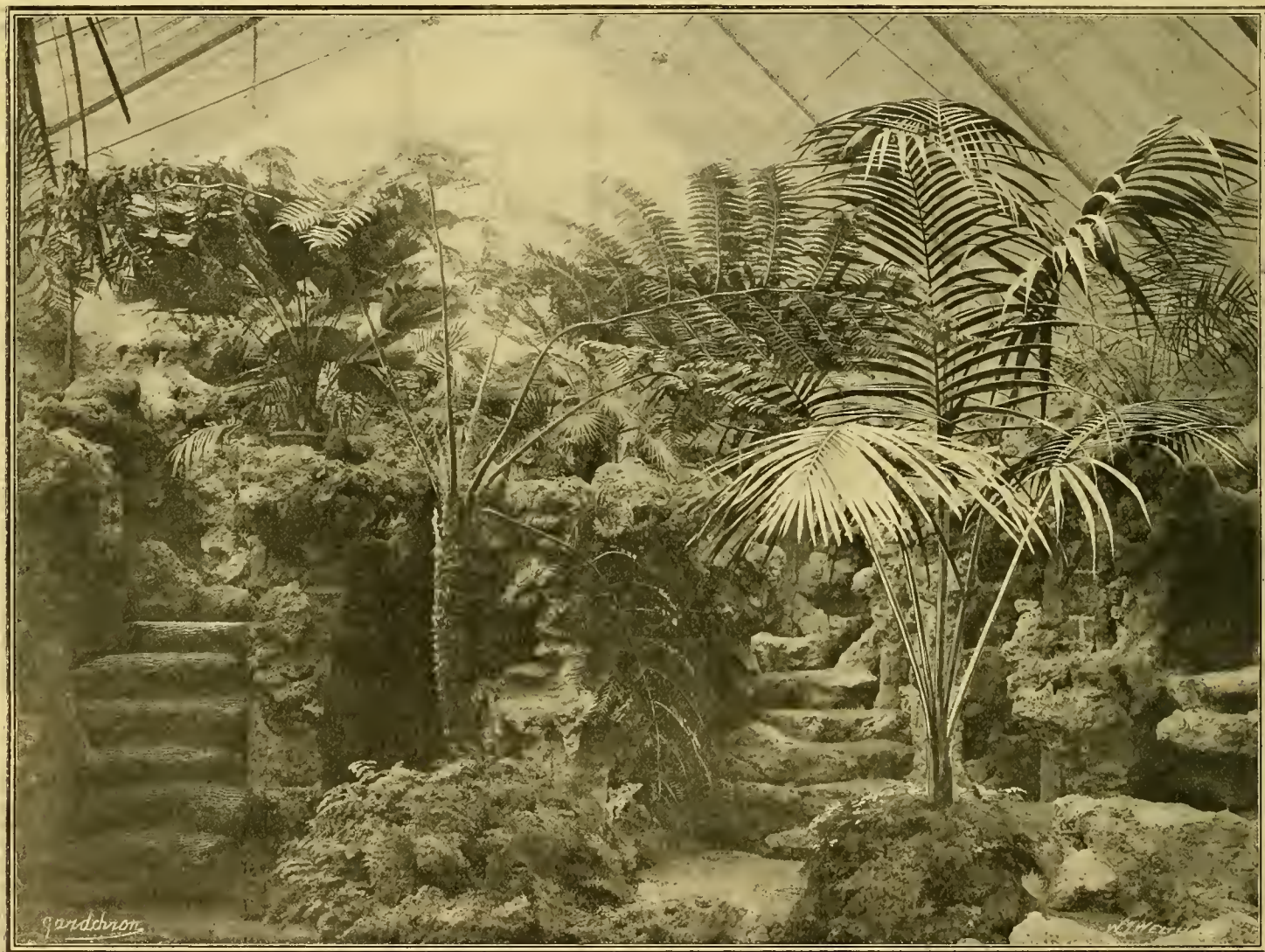


FIG. 200.—VIEW IN THE PALM HOUSE AT WITHNELL FOLD.

show-house is 50 feet by 20 feet. Three circular groups of plants occupied the floor space, and consisted mainly of the *Souvenir de la Malmaison* type of *Carnations*, mostly in 9-inch pots, and very fine they were. There were smaller plants on the side-staging, also well-grown plants of *Lilium longiflorum giganteum*, Sutton's strain of tuberous-rooted *Begonias* and *Gloxinias*, with Messrs. Dickson's strain of *Calceolarias*.

Another house of the same dimensions is laid out in rockwork with a small gallery (see fig. 200). There is a miniature stream of water meandering in the floor space. The house is already well furnished with healthy Palms, Tree Ferns, and a choice selection of plants suitable for rockwork. There are five houses on the north of this which

forms three sides of a large square, this providing an excellent playground for the children. The dwellings have nicely-kept gardens attached. A short distance away is a newly-made cricket ground, the formation of which must have been very expensive, for it is on the crest of the hill and needed much filling or banking on the lower side. *W. P. R., Cueden Hall Gardens, Preston.*

PUBLICATIONS RECEIVED.—*Bulletins from the Cornell Agricultural College.* We have received the following *Bulletins from the Cornell University, Experiment Station of the College of Agriculture*: No. 215, *The Grape Leaf-hopper*, by M. V. Slingerland; 216, *Spraying Experiments*, by J. L. Stone and John Craig; 217, *Spray Calendar*; 218, *Onion Blight*, by H. H. Whetzel; 219, *Diseases of Ginseng*, by James M. van Hook.

useful for ornamentation. *P. M. floribunda* and *P. baccata* should be planted alternately if employed for covering arches, and the growths should be thinned out after they have flowered in the spring. The same system of pruning applies to bush or standard trees, which may be made into nice "heads" if all the straggling and cross-growing branches are removed. Standard trees if trained down to a round hoop and provided with a seat round the stem, become picturesque-looking retreats on the lawn. Now that the leaves are off, the trees may be spurred in to form any shape or device, and they will flower profusely in the spring. The plants require much moisture, but they will grow well in any good garden soil.

Cassia fulvida.—This (better known as *Diplopappus chrysophyllus*) is a valuable shrub for flowering in summer, and for providing a good

effect in autumn by its golden-coloured foliage, which is useful in the making of wreaths, &c., employed in Christmas decorations. The species may be grown as a shrub, or be planted in beds, where the growths can be pegged down. In the wild garden it has the best effect when the growths are pegged down roughly, and the common double Daffodil planted between them. The stock can be increased by inserting layers in spring. The most suitable soil is one composed of three parts peat and one part loam, and the position chosen for the plants should be one where there is considerable moisture.

Choisya ternata.—Although hardy in this locality the *Choisya* requires shelter from cold winds. A few straw-made hurdles may be placed round the plants. The stock may be increased by layers inserted in pots in spring. They can be forced into flower if necessary. The plants require a soil of three parts peat and one part loam, and although they require plenty of moisture the foliage becomes yellow if the subsoil is cold or wet.

Box Edgings.—Where the Box appears in poor condition lift the plants, and after removing the old soil apply some rich loam. Then cut over all the old plants that are of use and heel them in in some sheltered corner till spring. Obtain some young plants if possible, and heel these in also until there is warmer weather. In exposed positions the planting will be best left until April or May. After replanting do not clip the Box until it commences to grow.

FRUITS UNDER GLASS.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Vine Borders.—The renewing of old Vine-borders and the formation of new ones, which now engage our attention, entail considerable additional labour. Success in Vine-culture depends in a large measure upon the manner in which the borders are prepared for the plants. The best materials obtainable should be used, and the work should be carried out under proper supervision. Make close observation when removing old borders, some of which have perhaps been in existence over thirty years, for valuable lessons can be thus learned. Surprise is often expressed in cases where insufficient air has been afforded when it is seen that the general condition of the roots resembles long, rambling branches of the Virginian Creeper. They are few in number, and are generally deep in the ground, congregated around the outsides, and apparently trying to get through the corners. Yet the Vines have borne foliage and fruit each year in spite of these unfavourable conditions. In well-drained, well-aerated borders the soil remains in a better condition, and the roots are more vigorous and fibrous. The composition of the borders must in a great measure depend upon the nature of the soil and subsoil. At this place the subsoil being chalk-rock, foundations of concrete are quite unnecessary to prevent the roots from penetrating too deeply; but in almost any subsoil the same object can be accomplished by providing an additional depth of drainage, and further advantages over the concrete are that there will be a freer circulation of air about the roots, and more natural moisture arising from the open subsoil. In our own case the greatest success has been obtained in instances where the subsoil has been broken up, and our failures have occurred where this has not been done. The soil which we are using for making the borders has to all appearance never been under cultivation before, and consists of a yellow calcareous turfy loam about 5 inches in depth, resting on a flinty gravel upon a chalk-rock foundation. Gorse grows in this soil most luxuriantly. The soil contains a fair amount of fibrous substance, and by retaining the turves whole about 4 inches in thickness, these elements are much longer in decomposing. A free use is made of charcoal, 3-inch bones, wood-ashes, and lime rubble. Nothing of a rich or retentive nature is employed, it being in badly drained borders, composed of soils which are too rich and retentive of moisture that the young fleshy Vine-roots perish in winter. In the calendar printed in the *Gardeners' Chronicle* for February 13 last, directions were given under the heading New Vine borders.

THE KITCHEN GARDEN.

By JOHN PENTLAND, Gardener to C. H. B. FIRTH, Esq., Ashwicke Hall, Marshfield, Chippenham.

Carrots and Radishes.—If hot-beds have been prepared according to directions already given, cover the surface of the manure inside the frame with about 8 inches of rich sandy soil as free as possible from slugs. When the heat has sufficiently declined sow the seed either broadcast or in rows. We prefer the latter method, allowing a distance of 3 inches between the drills. Sow the Carrot and Radish seed alternately, thus, when the Radishes arrive at maturity and are cleared off, the Carrots will be ultimately left 6 inches apart between the lines, which, with suitable thinning, will allow ample space for these vegetables. When the seedlings are up allow them the fullest exposure to light and sunshine, giving due attention to ventilation when necessary in order to prevent weak growth.

Cucumbers.—In establishments where these vegetables are in demand all the year round, every effort should be made to keep up the supply. Plants that have been in bearing for some time should receive a top-dressing compost of equal parts of short-manure, such as that from spent Mushroom-beds, and of well-chopped turfy loam. As a preventive against insect pests, include a fourth part of soot and dry slaked lime. Turn the heap over several times, and then place it where it may be brought to the same temperature as the Cucumber-beds themselves. Apply the compost as a surface-dressing about 3 inches in depth, taking the precaution not to heap the soil round the stem of the plants, or it may cause them to rot off at the collar. It frequently happens that side shoots decay when cut close to the stem, and this, if not attended to, spreads to the main stem, causing the death of the plant. In view of this fact a small box or flower-pot of dry lime should always be kept at hand, and on the least sign of canker in the plant a little of the powder should be rubbed well into the wound. This remedy, if applied in time, usually dries the tissue of the diseased portion and prevents it spreading. Careful watering and ventilation will be necessary until the days lengthen. Afford only sufficient moisture at the roots and in the atmosphere to keep the plants growing healthily, but taking care that beds placed over strong bottom heat are always sufficiently watered to wet the bottom soil. Guard carefully against the presence of mildew, and should this appear apply the paraffin and sulphur composition as advised for Tomatos in last week's Calendar.

Forcing.—This department requires daily attention, turning out the old roots or plants, and replacing with new in order to keep up a succession. When it is noticed there is a considerable demand for a certain vegetable, lose no time in propagating an extra batch in order to meet the requirements, and if anything for which there is no demand is past its best, take steps to obtain a succession, for it is likely to be called for when least expected.

THE HARDY FRUIT GARDEN.

By H. MARKHAM, Gr., Wrotham Park, Barnet.

Nuts.—In districts where the climate is favourable to Nut culture, a few bushes ought always to be grown, as they are very remunerative, and a dish of good Cob-nuts, with fresh, plump kernels, is usually appreciated during the winter months, when fruits are somewhat scarce. The soil that best suits the growth of nuts is that of a moderately light loam, free from rich manure or anything that would cause the bushes to make coarse wood. If the land is of good depth and consists of suitable loam, let it be trenched two feet deep, breaking up the subsoil so that it will afterwards allow the water to pass away freely. Should the land be poor, however, and in need of manure, fur waste or thoroughly decomposed horse manure should be mixed with the soil as the work of trenching proceeds. Nut bushes succeed best on a southerly aspect, which is sheltered from the north and east winds. In Kent, where there are many acres of land devoted to their culture, the bushes are set out at distances of 12 to 14 feet apart each way, and the growths are kept well under hand by the use of the knife, the height of the bushes being, as a

rule, from 6 to 8 feet. Each branch is kept well feathered with small fruiting twigs from the bottom to the top. In mixed fruit plantations the distance between the bushes is regulated accordingly. Filberts ripen early, and the Cobs make a capital succession.

Wall-trees &c.—Proceed with the pruning of trees against walls, if the work has not been completed. When the trees against a particular wall have been finished, rake up the prunings and make the border tidy. Those intending to graft any favourite varieties upon other stocks or trees should not omit to save a few prunings for the supply of scions. These should be tied in bundles, correctly labelled, and then embedded in the soil under a north wall, where they may remain until the time for grafting arrives, it being desirable to have the scions less forward than the stocks.

Apricots being the first fruit trees to flower on walls out-of-doors should be cleansed, pruned, and nailed before the buds get too forward, otherwise some damage may be done to the buds, when carrying out the work. Do not dress the young wood of the trees with very strong insecticide, and be careful not to bruise the wood when driving nails into the wall. Those intending to devote a stretch of wall space to the culture of Apricots should first see that the soil is sweet and fresh, and that it contains plenty of lime, rubble, &c., but not an excessive quantity of manure. Make the soil very firm around the trees, and allow plenty of room betwixt the stems and the wall, that the stems may swell as required; the sheds likewise should be made so that the shoots will have room to swell. The walls should be thoroughly "pointed" over, filling up the crevices with mortar to prevent woodlice and snails from harbouring in them.

PLANTS UNDER GLASS.

By C. R. FIELDER, Gardener to Mrs. BURNS, North Mymms Park, Hatfield, Hertfordshire.

Streptosolen Jamesoni.—The long, arching shoots of this plant when furnished with the reddish-orange-coloured flowers are extremely effective, both when used in the cut state and in pots. Good specimens up to about 4 feet in height, and of the pyramidal habit, which is natural in young and well-grown plants of this species, may be easily grown from cuttings in one season, and they form excellent subjects for room and conservatory decoration. It may also be planted-out in the greenhouse or conservatory, and trained up the pillars or rafters. When raised from cuttings each year, and grown in pots for decorative purposes, the plants should not be stopped, as when properly grown they produce side-shoots regularly from the whole length of the main stem. Plants which have been growing in a temperature of from 45° to 50° since the early autumn are showing their flower-buds. A portion of these will now be placed in an intermediate house with a view of bringing them into flower early in the new year, and the remainder will be kept back to form a succession. When required to bloom in the spring months, the plants should be wintered in a temperature of about 40°, but it should not fall much below this.

Hydrangea paniculata grandiflora.—This plant is largely grown in pots for conservatory and house decoration. In the cut state the large creamy-white flower-trusses are of great service for filling large vases. Plants which have been received from the nursery should be placed in pots of a sufficiently large size to contain the roots comfortably, strong plants requiring pots 8 inches in diameter. A suitable compost may consist of three parts loam and one part of well-rotted manure. After potting let the plants be plunged in ashes in the open-air. Before being introduced into heat the shoots must be cut back to within about 2 inches of the old wood. The beginning of January is quite early enough for the first batch to be placed in heat, and a temperature of about 50° is sufficiently high to commence with. The plants should be afforded a position near to the roof-glass. When the young growth has become about an inch in length disbudding should take place, the weaker shoots being removed and leaving only one or two shoots on each spur.

For Week's Work in the "Orchid Houses," see p. 467.

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Newspapers.—Correspondents sending newspapers should be
careful to mark the paragraphs they wish the Editor to see.

SALES FOR THE WEEK.

MONDAY & FRIDAY NEXT—

Azaleas, Roses, Herbaceous Plants, &c., at 67 and
68, Cheapside, E.C., by Protheroe & Morris, at
12 o'clock.

WEDNESDAY NEXT—

Hardy Border Plants, Azaleas, Palms and Plants,
Roses, Fruit Trees, and Border Plants, at 67 & 68,
Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.

FRIDAY NEXT—

Great Sale of Burmese Dendrobies, at 67 & 68 Cheap-
side, E.C., by Protheroe & Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced
from observations of Forty-three Years at Chiswick
—36°6'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 28 (6 P.M.): Max. 50°;
Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street,
Covent Garden, London.—Thursday, Dec. 29
(10 A.M.): Bar., 30.4; Temp., 53°. Weather
moderately bright.

PROVINCES.—Wednesday, Dec. 28 (6 P.M.): Max. 51°;
South West Coast of England; Min. 41°;
North East Coast of Scotland.

The Events
of the Year.

THE last number of the
present year, issued as it is
on the last day of 1904,
naturally suggests a retrospect of the year's
proceedings. Following the usual custom,
we begin by an allusion to the weather.
Whilst that of 1903 was almost or quite as
bad for gardening purposes as 1879, we have
this year been blessed with an unusually
fine summer, and our gardens and especially
our fruit crops have experienced the benefit,
so that we can look on the frost, the rain,
and even the fogs that have characterised
the last weeks of the year with something
like complacency.

The great event of the year from the point
of view of general horticulture has been the
celebration of the Centenary of the Royal
Horticultural Society. So much has been
written on this subject that it will
suffice now to say that the memor-
able event has been celebrated in a
fashion that could not have been anti-
cipated a few years ago. Sir THOMAS HAN-
BURY has provided a new garden near
Weybridge to replace that at Chiswick,
endeared by so many associations, and
which has earned the gratitude of gardeners
throughout the empire, and we may say
throughout the world, by its introductions
of new plants, its trials, and its conferences.
Let us hope that the glorious traditions of
Chiswick may find their parallel at Wisley!

Thanks mainly to the initiative and sup-
port of Baron Sir HENRY SCHROEDER, and
the help of many well-known horticulturists,
a home has been erected for the Horticul-
tural Society, the last "Drill Hall" show
having been held on June 28.

The new building is all but complete;

the Hall, indeed, has been in use since
July 22, when it was opened by His Majesty
the KING, who was accompanied by the
QUEEN and Princess VICTORIA. Nothing
could have been better managed than the
opening ceremonial, and the shows that have
been held since have amply demonstrated
the success of the architect, Mr. Stubbs,
in providing a spacious, commodious, and
well-lighted hall. The offices, lecture-rooms,
and library have yet to be submitted to the
test of actual use, but there seems to be no
doubt that the Society has at last obtained
what it so urgently needed, suitable offices,
an exhibition hall, and a room for the Lindley
library—in fact, a home. And when we
speak of the Society we allude to it in its
capacity as the national representative of
gardening in all its branches, artistic,
scientific, practical.

Well indeed has the centenary been
celebrated! Of course this could not have
been accomplished without the financial
support and the assistance of the Fellows
and the guidance of the Council. No one
will feel that it is invidious in this con-
nection to make mention of Sir TREVOR
LAWRENCE, who through evil times and
through more prosperous periods has as
President exerted the most beneficial
influence and the most unflinching vigilance.

Of the Secretary, the Rev. W. WILKS, it is
needless to do more than point to the
present state of prosperity and compare it
with the turmoil and financial embarrass-
ment which prevailed when he took office.
Of him it may well be said, "*Si monumentum
quæris circumspecte.*"

To the fortnightly meetings and the
larger shows in the Temple Gardens and at
Holland House, it is not necessary here to
do more than allude, whilst the great British
and the Colonial Fruit Shows are too recent
to need further reference.

The great Rose Show of the National
Rose Society in the Temple Gardens pro-
fited by the fine weather; a better exhi-
bition of the kind has probably never
been witnessed. The Shrewsbury Show was
as large as ever, but the comfort of the
visitors was sadly interfered with by a
deluge of rain. The great show at Düssel-
dorf was a success, but the horticultural
department at the great Exhibition at St.
Louis is not so favourably spoken of.

The National Potato Society, which was
inaugurated only at the extreme end of
1903, has progressed apace, and has
attracted public attention by reason of
the inflated prices asked and obtained for
certain new varieties of Potatoes whose
real value has yet to be subjected to more
prolonged experience. It is not likely that
a sum at the rate of £160 per pound, which
was actually paid for Eldorado, will be
maintained. The Society held a very large
exhibition at the Crystal Palace, which was
useful as an announcement to the public,
and brought out sundry interesting exhibits.
But the best work of the Society has yet to
come, and when the reports of the trials
that have been undertaken in various
counties come to be published, we shall be
placed in possession of some very important
practical information. In the meantime
the energy of the Secretary, Mr. WALTER
WRIGHT, is already having excellent results,
and under his guidance the Society has
doubtless a great future before it.

The inauguration, on Wednesday, June 1,
of the British Gardeners' Association will prob-
ably be considered by gardeners in the future
as an historical event. Constant lamentations
have been heard as to the disabilities under
which gardeners in general pursue their
calling, the scanty rate of pay accorded
them as compared with that meted out to
other workers from whom much less ability,
responsibility, and forethought are de-
manded. Constant and continuous as have
been the complaints no concerted action to
remedy them has till now taken place. Gar-
deners have always been more or less
isolated, and indeed must remain so. This
circumstance is no doubt an obstacle to co-
operation and conjoint action. But it oc-
curred to Mr. WATSON and others that this
obstacle was a thing to be overcome. Hence
the meeting at the Essex Hall, Strand, on
June 1, in the Temple Show week. At that
meeting, which was very largely attended,
certain general principles were laid down
and a programme submitted. These were
adopted by an overwhelming majority of
those present. The great point was to get
the Association started, and this was suc-
cessfully done. Objections were raised to
this and that detail, all of which may safely
be entrusted to the managing Committee to
deal with when the requisite number of
members (500) have joined the Association.
The gardeners have so good a case, that if,
while exercising their individual liberty and
co-operating for the common benefit, they
refrain from tyrannical infringement on the
rights of others, they are certain to succeed.
An Association of this kind will benefit the
employer, by affording some guarantee that
the man he employs has had some training,
that he is really a gardener in possession
of credentials as to his ability and his
character, and these credentials will be
obtained from those best qualified to give
them—his fellow-gardeners.

The Kew Guild, a copy of whose annual
report lies before us awaiting further notice,
affords an illustration of what may be
done by self-help blended with reciprocal
co-operation.

So far as the progress of our art is con-
cerned, we note that the year now at an end
has been signalised by the introduction of
numerous interesting and beautiful new
plants, of which we shall, in accordance
with our usual practice, give a more detailed
account in a future issue. The number of
hybrids and cross-breeds introduced to our
notice has also been very large, and it is
satisfactory to find that the discussion on the
Mendelian hypothesis is stimulating research,
and whatever be the ultimate result, already
holds out promise that the hybridiser may
in future be able to work according to
certain definite rules, and be able to secure
the results he aims at with something like
precision. But although there are some
indications of progress in the establishment
of such colleges as those at Reading, Wye,
and elsewhere, our efforts in promoting
the science of horticulture, which it must
be always remembered means its practical
advancement, are puny indeed as com-
pared with what is taking place in Germany,
and especially in the United States. From
this point of view we desire to call special
attention to the letter on p. 72 of the
issue for January 30, 1904,—a letter written
by a correspondent who has had pro-
longed experience in both countries, and

knows the circumstances of each. In this connection, however, it would be ungracious to omit mention of what is being done by our Board of Agriculture in the circulation of leaflets, which put at the disposal of cultivators the latest information on subjects likely to be of interest to them.

The enormous losses sustained by growers of Cucumbers and Tomatoes for market in consequence of the development of certain fungi show the urgent necessity of advancing the science of vegetable pathology by every means in our power. The history of the "Potato disease," meaning thereby the disease occasioned by the fungus called *Phytophthora*, is most instructive from this point of view. Older readers of the *Gardeners' Chronicle* will remember the endless suggestions that were made as to the cause and cure of the malady from practical men who had the plants under constant observation; but it was not until DE BARY, BERKELEY, WORTHINGTON SMITH, and others attacked the problem from the scientific side that any progress was made, either towards the knowledge of the disease or the means of combating it. Now the history and mode of life of the fungus are known in most of, but still not in all, their details, and the result has been to show that by strict hygienic measures in place of utter carelessness and disregard of obvious precautions, by the gradual selection of varieties less liable to attack than others, by the use of Bordeaux-mixture and high moulding, the disease can be very effectually checked if not exterminated. And so, no doubt, it will be with other fungous diseases if we get a sufficiency of laboratories, experimental stations, and last, not least, of competent investigators.

The gardening charities have pursued their beneficial course as usual, limited only by the amount of support accorded them—a support by no means adequate to the necessities of the case. The nites of the gardeners are still sadly deficient; but the enthusiastic reception given to Mr. HARRY VEITCH when he presided over the annual dinner of the "Gardeners' Benevolent," will not soon be forgotten, and will, we trust, arouse the rank and file to a sense of their duties in this matter. The amount of support obtained at the Festival of the Royal Gardeners' Orphan Fund was unusually satisfactory.

The obituary record is a long one, and the loss of Dean HOLE, the foremost man of his time in popularising gardening and advocating its claims, will be felt for many a day. The death of the Rev. C. WOLLEY-DOD as a representative amateur gardener will also be felt by a very wide circle of those interested in the cultivation of plants. ROBERT MACLACHLAN was probably known personally to a comparatively limited number of gardeners, but to him as our entomological referee, after the death of WESTWOOD, our readers are more deeply indebted than most of them are aware. Mr. MACLACHLAN was not only an entomologist but a gardener as well, and a constant attendant at the Royal Horticultural Society and the Scientific Committee, of which he was one of the oldest members, and where his loss is deeply regretted.

At the Linnean Society, connected with horticulture by ties of association and community of objects, the year has been

rendered memorable by the resignation of Professor VINES as President, and by the election in his stead of a zoologist, in the person of Professor HERDMAN. The Society has also obtained a new Charter, by virtue of which ladies can now be elected Fellows of the Society, and among the ladies already elected are several who have attained high distinction in botanical pursuits and Miss WILLMOTT, whose position in the horticultural world needs no indication on our part.

Kew is an establishment of which we have reason to be proud, and whatever our national shortcomings, we can always point to Kew, as also to Rothamsted, as unrivalled in their separate departments. At Kew the additions made to the Herbarium building have more than doubled the available space, while the whole structure has been rendered "fire-proof."

Taken as a whole the year 1904 has been so eventful that we might occupy much more space with these reminiscences. We have said enough to show that the year has been one of such hard work and satisfactory progress that we may confidently look forward to its successor with the most hopeful anticipations.

* * * OUR ALMANAC.—According to our usual practice, we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1905. In order to make it as complete as possible, we shall be obliged if Secretaries of Horticultural, Botanical, and allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.

THE BOTANIC GARDEN AT EALA.—The *Revue de l'Horticulture Belge* for December 1 includes an account of the Botanic Garden at Eala, on the Congo, from M. LÉON PYNAERT, a son of our much-regretted friend. M. PYNAERT, before taking office at the Congo, studied at Brussels, at Kew, in Ceylon, and at Buitenzorg. He says that "the Eala Garden, lately instituted, has made really marvellous progress; the fine park and its annexes extend over more than 65 hectares (about 160 acres), and include the botanic garden properly so-called, the trial-grounds, and the model farm. In the park of the former of these establishments may be noticed in judiciously arranged groups a number of economic and other plants, classified in families, for the convenience of the numerous visitors and nurserymen's agents who stay at Eala. Suffice it to mention, especially, among the more important families the Rubiaceae, with various species of Coffee, Cinchona-trees, &c.; Palms, Euphorbia, and especially the Apocynaceae, including the *Landolphas*, and many Rubber-plants, with a collection already very important of caoutchouc-yielding trees. In the trial-grounds also the principal space is reserved for Rubber-plants, *Castilloa*, *Hevea*, various *Kickxias*, *Mimusops* *balata*, *Manihot* *Glaziovii*, *Landolphia* *owariensis*, *Clitandra* *Arnoldiana*, &c. Textile plants are represented by valuable trials of Cotton from various provinces, *Sansevieria*, *Furcraea*, *Agave*, *Jute*, &c.; also there are fine experiment-grounds for Sugar-canes, Camphors, Ginger, Peppers, Vanillas, and for various fodders intended to improve the ordinary fare of cattle. This garden and its successful progress will prove of immense service to the agriculture of the Congo."

PHYLLODY CAUSED BY PARASITES.—Phylloidy and proliferation in certain *Trifoliums*, *Cardamines*, *Senecios*, and other plants have often been observed, but the cause of these deviations is unknown. M. MARIN MOLLARD has discovered that the malformation is, in some instances, caused by an insect attacking a plant at a

distance from the flower. In the *Comptes Rendus* for November 28, 1904, M. MOLLARD sums up his investigations as regards these parasites, which are of different species varying with the plants attacked. In *Trifolium repens* the effect of the intruders is to induce atrophy of the stamens, and a more or less marked transformation of the sepals, petals and carpels into foliaceous, green scales, or perfect leaves in miniature. The parasites are certain larvæ which scoop galleries at the base of the stems. They are, many of these pests, Rhynchophorous insects, which appear to cause atrophy of the reproductive organs, accompanied with virescence or proliferation of the flower. The conditions of nutrition are thus more or less deeply modified in organs situated at a distance from the part attacked.

THE EMBANKMENT GARDENS.—We wonder who is responsible for spoiling the stretches of green turf by cutting out so many meaningless trivialities in the way of flower-beds? There is, of course, no objection to flower-beds in restricted numbers in appropriate situations and of good design, but we do not think that any of these conditions are complied with in the gardens in question. The eye is simply worried with the intrusion of these inanities.

ONION BLIGHT.—Among the recently published *Bulletins* of the Agricultural experiment station of the Cornell University is a report on the disease known as Onion-blight, due to the attack of *Peronospora Schleideni*, first described in our columns on Sept. 20, 1851, p. 595, by the late Rev. M. J. BERKELEY. Mr. WRETZEL now publishes a full account of the fungus, and of the methods of getting rid of it.

SOLANUM COMMERSONI.—At the meeting of the Academy of Sciences, Paris, on December 12, 1904, M. LABERGEIE read a paper on *Solanum Commersoni*, which he has been cultivating on rather a large scale. Among other things noted by the observer was the production of a variety with purple-skinned tubers, which produced plants of robust habit and immune from the attacks of the Potato fungus (*Phytophthora*), whilst other plants originally derived from the same source were severely attacked by disease. The percentage of starch has risen from 11.5 per cent. in 1901, to 14 per cent. in 1903, and 17 per cent. in 1904, and the flavour of the tubers is stated to be excellent. *Solanum Commersoni* has hitherto been recommended in France as a forage plant only, but M. LABERGEIE'S trials show that this variety is also productive as regards the tubers, that these are of good flavour, rich in nutriment, and specially adapted for cultivation in wet soils that are ill suited for ordinary varieties.

CASELL'S "POPULAR GARDENING."—Part 20 of this useful publication is now ready, and the contents of it deal with bulbs, home-made sheds, and verandahs, greenhouse plants, hints to exhibitors, and many other matters interesting to professional and amateur gardeners. Plenty of illustrations are included in this Part, which also contains a coloured plate of May-flowering Tulips.

"THE GARDEN."—It is announced that, commencing with the New Year, the price of the *Garden* will be reduced to one penny weekly, but that no other alteration will be made, except that coloured plates will be given at regular intervals. The character of the paper will in no wise be altered. We do not doubt that the abatement of price will result in a great increase in the circulation, and be the means of reaching a large number of readers interested in gardening. The editorship will still be in the capable hands of Mr. E. T. COOK, who has our best wishes for the success of the new departure.

HORTICULTURE.—We note the appearance, from Boston, Mass., of a new gardening publication entitled *Horticulture*. It is "devoted to the florist, plantsman, landscape gardener and kindred interests," and contains plenty of helpful articles and notes, with illustrations. We hope the venture will prove a successful one as the editor, Mr. WM. STEWART, is evidently doing his best in the matter.

GERMINATION OF PEPEROMIA.—Those who have the chance should watch the germination of these plants. At the Cambridge Philosophical Society recently, Mr. HILL pointed out that the seedlings of *P. umbilicata* possess two cotyledons, but that while one escapes from the seed and does its work as a true leaf should do, the other one remains in the seed and acts as an absorbent organ, like the so-called "foot" of some Cryptogams.

letters of sympathy sent to her on the death of her husband, finds that her health will not allow her to do so, and must ask all through the medium of the Press to accept this expression of her heartfelt gratitude for the kindness shown her.

FLOWERS AT LLANDUDNO IN NOVEMBER.

FOR the accompanying illustration (fig. 201) we are indebted to our old correspondent, Mr. Joseph Broome, so well known to florists and gardeners of the olden time. It represents flowers cut from the outside garden near Llandudno, N. Wales, at the very end of November. It will surprise many to learn that Tuberose were in good bloom in the open at that date; but such is the fact, and they had been in bloom continuously since May. They are started in a heated frame,



FIG. 201.—HARDY FLOWERS AT LLANDUDNO IN NOVEMBER.

"MR. DEAN OF ROCHESTER."—How embarrassing our names and titles of distinction are to our neighbours, as theirs to ourselves, may be seen in a recent number of a French periodical where the death of "Mr. Dean of Rochester, a Victoria medallist," is announced!

M. DANIEL.—A gold medal has been awarded by the Société Nationale d'Horticulture de France to M. DANIEL in recognition of his experiments and observations on grafting, to the remarkable results of which we have alluded on several occasions.

LAURELIA AROMATICA.—Dr. ACTON tells us that the remarkable shrub figured in our columns on December 10 must be monoecious, as there is no other shrub of the kind in the neighbourhood. It was procured from ROLLISON'S, of Tooting, many years ago, and has not produced fruit till this year. In any case it is a most desirable hardy shrub, its fragrant foliage alone giving it a claim to a place in any garden.

MRS. MILES, late of St. Mary's Cottage, High Wycombe, who had hoped personally to have been able to answer the numerous telegrams and

and as soon as they are an inch or two high, they are transferred to a bed in a sheltered position, each plant being carefully staked to prevent injury from wind. They grow rapidly when they get hold of the soil. Nothing surprises visitors more than to see fifty or a hundred Tuberose flowering in July, filling the garden with fragrance, and some blooming on even into November. The following is a list of flowers gathered from the open-air at Llandudno on November 26, and represented in our illustration (fig. 201):—

FLOWERS GATHERED NOVEMBER 26 IN OPEN-AIR.

- | | |
|---|---|
| 1. Sweet Peas | 16. Verbena venosa and hybrids, Achillea argentea |
| 2. Roses, H.P.'s | 17. Cytisus fragrans |
| 3. Helianthus cucumerifolius | 18. Pansies |
| 4. Large Chrysanthemums | 19. Polyanthus and Ten-week Stock |
| 5. Yellow Marguerites | 20. Bellis perennis, with Salvia splendens and Ceanothus "Gloire de Versailles" |
| 6. Single-flowered and "spidery" Chrysanthemums | 21. Marguerite Carnations |
| 7. Coreopsis grandiflora and Nicotiana glauca | 22. Cornflowers and Campanula Portenschlagiana |
| 8. Tea Roses | 23. Agathe celestis |
| 9. Tuberose | 24. Violets in variety |
| 10. Hellebores and Laurustinus | 25. Cineraria stellata and Cyclamen hederifolium |
| 11. Arctotis grandis | 26. Aubrietia and Alyssum |
| 12. Scabious | |
| 13. Auriculas | |
| 14. East Lothian Stocks | |
| 15. Roses La France, &c. | |

PLANT PORTRAITS.

ANTHURIUM MAD. OTTO BAILIFF.—Spathe cream-coloured, flushed with rose; spadix pink.—*Moniteur d'Horticulture*, November 10.

AZALEA INDICA FRAU META.—Blush double-pink.—*Garten Flora*, November 1.

LELIO-CATTLEYA MOSSIAE × ELEGANS.—*Illustrirte Garten Zeitung*, Wien, December.

ROSE CONTESSA CECILIA LUBIANI, H.T.—A cross between Kaiserin Augusta Victoria and Principessa di Napoli. The colour of the flowers is rose-salmon. M. Paul Brauer, of San Remo, is the raiser.—*Moniteur d'Horticulture*, December 10.

HYDRANGEA HORTENSIA ROSEA.—*Garten Flora*, December 1, t. 1533.

ROSE MADAME ANTOINE MARI, T.—*Rosenzeitung*, November.—Flowers pale buff, shaded with pink in the young state. Raised by M. Mari, of Nice.

In the last number of the *Forest Flora of New South Wales* the following species are described and figured:—*EUCALYPTUS CORYMBOSA*, t. 45; *CALITRIS MACLEAYANA*, t. 46, A—C; *C. VERRUCOSA*, t. 46; *C. ROBUSTA*, t. 47, A—J; *C. COLUMELLARIS*, t. 47, S—W; *C. MUELLERI*, t. 48, A—K; *C. PROPINQUA*, t. 47, K—R; *C. CALCARATA*, t. 48, K—Q; and *C. CUPRESSIFORMIS*, t. 48, R—Z.

JOHN SEDEN, V.M.H.

It is with regret that we have to announce the retirement from the firm of James Veitch & Sons of their well-known hybridiser. Mr. Seden retires on a pension, to the great regret of the firm whom he has so loyally and so signally served. A pupil of Dominy's, he has had larger experience than any similar experimenter. Notoriety and self-seeking have been so foreign to his character that we may question whether any firm has been more loyally served by any assistant than has the great establishment with which Mr. Seden has been connected since 1861.

To every lover of Orchids the name of Seden is familiar, as probably no other person now living has enriched our collections with so many fine hybrids or practised in so wide a field.

John Seden was born at Dedham, in Essex, July 6, 1840, and early in life commenced his career as a gardener, working in several private gardens before he came to Chelsea in January, 1861. In the autumn of 1861 he was transferred to Exeter, under Dominy, amongst the Orchids and stove plants, and it was here that he was first initiated into the practice of hybridisation, which he has since so persistently followed with such good results. The autumn of 1862 saw Seden again at Chelsea in charge of the Orchids, some of the stove plants, and the Nepenthes, and amongst these he commenced experiments in hybridisation and cross-fertilisation.

Caladium × Chelsoni, *Alocasia × Sedeni* (which received a Gold Medal from the Horticultural Society), *A. × Chelsoni*, *A. × intermedia*, *Nepenthes × Sedeni*, *N. × Chelsoni*, *Amaryllis (Hippeastrum) Brilliant*, *Chelsoni*, and *maculata*, the three first seedlings to be raised at Chelsea, are some of the results obtained from his early experiments.

About a dozen varieties of *Gloxinia*, progenitors of the fine strain since developed at Chelsea, were distributed from seedlings raised by Seden from intercrossing the best existing forms.

In 1867 the tuberous *Begonia* was taken in hand, several of the original species being then available through introductions of the firm's collector Pearce and, later on, of Davis. For a number of years hybrids and varieties were regularly distributed, and these laid the foundation on which have been built the fine strains existing at the present day. The first variety with pure white flowers was raised at this period, originating in a batch of seedlings of *Begonia rosea* flora; and the first double-flowered variety was obtained by fertilising a flower of *Begonia × Sedeni* with its own pollen.

About the same time Seden commenced hybridising Orchids. Since his first hybrid, *Cypripedium*

dium \times Sedeni, flowered in 1873, Seden has raised 150, hybrid *Cypripediums*, 140 *Lælio-Cattleyas*, 65 *Cattleyas*, 40 *Dendrobiums*, 25 *Lælias*, 16 *Phalanopsis*, 20 *Epidendrums*, 12 *Masdevallias*, 9 *Calanthes*, 8 *Sophras-Cattleyas*, 5 *Phaio-Calanthes*, 6 *Disas*, 4 *Zygopetalums*, besides miscellaneous hybrids, such as *Chysis* \times *Chelsoni*, *C.* \times *Sedeni*, *C.* \times *langleyensis*, *Thunia* \times *Veitchii*, *Sobralia* \times *Veitchii*, *Cymbidium* \times *eburneo-Lowianum*, *Phaius* \times *amabilis*, *P.* \times *maculato-grandifolius*, \times *Epilælia radico-purpurata*, *E.* \times *Eros*, \times *Leptolælia Veitchii*, *Angræcum Veitchii*, *Miltonia Bleuana splendens*, *Odontoglossum excellens*, *Anguloa intermedia*, and others.

The following hybrids other than Orchids have also been obtained:—*Echeveria glauca metallica* from *Echeveria secunda glauca* and *E. metallica*, *Veronica Purple Queen* from *Veronica Hendersoni* and *V. Traversii*, \times *Escallonia langleyensis* from *Escallonia philippinensis* and *E. macrantha sanguinea*, *Althæa Primrose Queen* from *A. ficifolia* and *A. rosea*; *Hemerocallis luteola*, from *Hemerocallis Thunbergii* and *H. aurantiaca majus*; *Rose Queen Alexandra*, from *Crimson Rambler* and *Rosa multiflora simplex*; *Electra*, from *R. multiflora simplex* and *W. A. Richardson*; *Myra*, from *Rosa Wichuriana* and *Crimson Rambler*.

In 1889 Seden was transferred to the Langley nursery, and since that time he has devoted much of his attention to the improvement of hardy fruit. Amongst other varieties raised by Seden, the following have been distributed:—*Strawberry Veitch's Perfection*, obtained from *Waterloo* and *British Queen*; *Veitch's Prolific*, from *Empress of India* and *British Queen*; *Lord Kitchener*, from *British Queen* and *Waterloo*; *The Khedive*, from *Lord Suffield* and *British Queen*; *President Loubet*, from *Waterloo* and *Lord Napier*; *the Alake*, from *Frogmore Late Pine* and *Veitch's Perfection*. *Apple Langley Pippin*, from *Mr. Gladstone* and *Cox's Orange Pippin*; *Mrs. John Seden*, from *Transcendent Crab* and *King of Pippins*; *Mr. Leopold Rothschild*, from *John Downie* and *Cox's Orange Pippin*; *Middle Green*, from *Frogmore Prolific* and *Blenheim Pippin*; *Rev. W. Wilks*, from *Peasgood's Nonsuch* and *Ribston Pippin*; *Crab The Langley*, from *John Downie* and *King of Pippins*; *Veitch's Scarlet*, from *Red Siberian Crab* and *King of Pippins*; *Bullace The Langley*, from *Damsen Farleigh Prolific* and *Plum Black Orleans*; *The Mahdi*, the product of a cross between the common *Blackberry* and *Raspberry Belle de Fontenay*; *Gooseberry Langley Beauty*, from the varieties *Railway* and *Yellow Champagne*; *Langley Gage*, from *Pitmaston Green Gage* and *Telegraph*; *Golden Gem*, from *Whitesmith* and *Antagonist*; *Raspberry Yellow Superlative*; from *Superlative* and *Autumn Yellow*; *November Abundance*, from *Catawissa* and *Superlative*; and *Queen of England*, from *Superlative* and *Rubus laciniatus*.

In 1897 Seden was chosen as one of the original recipients of the Victoria Medal of Honour by the Royal Horticultural Society.

POTATOS.

THE variety *Sir John Llewelyn* was grown here this season for the first time, and proves to be a very much overrated variety. It very closely resembles *Snowdrop* in habit and in the appearance of the tuber, but is not such a good cropper as that old and very useful variety, neither is it so good in flavour when cooked. After reading so many opinions in its favour I am disappointed with it. Seed tubers were obtained from two sources. Those from the South made scarcely any growth owing to disease; those from Lincolnshire planted by their side grew well, and were quite healthy. *Northern Star*, *King Edward VII.*, and *Evergood* were grown side by side for comparison; being strong growers, 5 feet between the rows was allowed for the tops to spread, and the

tubers of all three varieties were cut and the eyes started in pots. *Northern Star* gave a heavy crop of large-sized tubers, equal to 8½ tons of ware and 8 tons 13 cwt. of seed and small tubers per acre, with the rows at the above distance; it was quite free from disease, and the tubers are still sound; there were no signs of supertuberation, the tops of all three varieties kept green until cut by frost, and digging was deferred until October 27. *Northern Star* cooks well, but has very little flavour, although it is certainly much better than *Up-to-Date*. *King Edward VII.* gave the heaviest crop of the three, 19 tons 11 cwt. per acre, comprising 9 tons 8 cwt. of ware and 10 tons 3 cwt. of seed and small

here ten seasons without a change of seed, and still crops as well as ever. Last year many tubers of this variety were diseased, and we lost a quantity of the seed tubers after storing, probably owing to the excessively wet season; this year they are keeping well. *Sutton's Favourite* is the best late variety we have for flavour and cooking qualities out of thirty-seven varieties. It is not a heavy cropper when compared with *Snowdrop*, but it gives a fair return of beautiful, even-shaped tubers, and cooks dry. *Duke of York* gave a heavy crop of large tubers, and scarcely enough small ones for planting again; it is an excellent cooker, of good flavour, has no disease, and is still in good condition. This variety

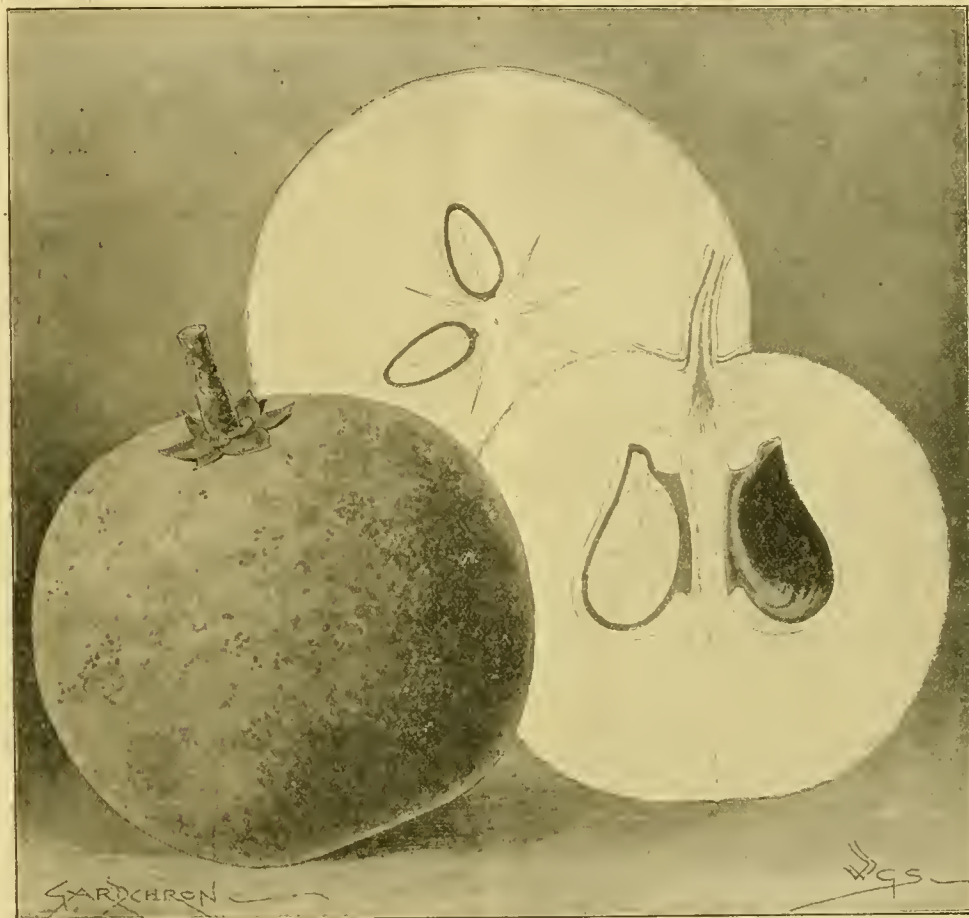


FIG. 202.—THE MAMMEE APPLE.

tubers. There was no disease when they were dug, but a few tubers have developed it since. Some of the tubers were much too large; the medium-sized ones were very pretty, but one cannot possibly eat them, and what is the use of a Potato which no one can eat? It might pay to grow for fattening pigs better than Barley, but this remains to be proved, and I am quite sure the bacon would not be so good. *Evergood* produced the greatest weight of ware, equal to 10 tons 5½ cwt. per acre, and only gave a very small proportion of seed, &c., viz., 3 tons 18 cwt. It had no disease, and is still sound, but the quality when cooked is very poor, although not so bad as *Up-to-Date*. The above weights might possibly have been increased by closer planting. Another point must be mentioned also—they were grown in the garden on soil overlying a deep cold clay, which cannot be said to be a favourable site for Potatoes; but midsummer varieties usually succeed well, especially *Snowdrop*, which has been grown

produces both kidney and round-shaped tubers and I have often seen it exhibited in both classes. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

THE MAMMEE APPLE.

AMONG the fruits exhibited at the recent show of Colonial fruits at the Royal Horticultural Society, were some fruits of the so-called Mamme Apple (fig. 202). In its unripe state its fruit is not edible, but when bletted like a Medlar it is not unpalatable.

EUCALYPTUS CORYMBOSA, figured in the last part of Mr. MAIDEN'S *Forest Flora of New South Wales*, is named Blood-wood for the reason that a blood-red "gum" (kino) exudes very freely from its trunk. Glutinous threads may be drawn out from the very young leaves when broken across; these threads are of the nature of caoutchouc. The timber is one of the most durable of all Australian timbers.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

CANADIAN APPLES.—If enquiry were made as to the cost of transit per barrel of Apples from Canada, Nova Scotia, or British Columbia, to some rural town, for instance in Devonshire. I fear it would be found that fully 7s. out of the 14s. a barrel of good Apples will fetch retail in this country would be so absorbed. It must be remembered that let the contents of a barrel be ever so good relatively yet there are always some fruits that are unfit for sale. Once the barrel is opened the fruits soon deteriorate. I can purchase really good Ben Davis, Baldwin, or King of Tompkins County retail at 3d. per lb. Naturally I could wish they were cheaper, but the retailer cannot afford to sell them at less. I can purchase small scabbed samples of home-grown Apples at from 1½d. to 2d. per lb., and they are dear at that. Never until we take to growing Apples on thousands of acres of ground, and practically on nursery lines, can we hope to see a big home supply. *F.R.H.S.*

BRITISH AND COLONIAL FRUIT.—When at the recent exhibition of Home and Colonial Fruit at the new Hall the Fruit and Vegetable Committee awarded Messrs. H. Cannell & Sons a Gold Medal for their very fine display of home-grown Apples, it was desired not only to mark the Committee's sense of the great excellence of the exhibit, but also as an acknowledgement of the enterprise of the firm in exhibiting at such a show such superb examples of British-grown fruit. Most certainly it would have been a misfortune had the public patronising the show no opportunity to note the merits of home-grown fruit when compared with that from our Colonies. That Kent county comprises an area from which come the finest Apples and Pears in the world is certain. North America may paint her fruit with richer hues than even Kent can, but not only are our fruits finer, but in quality are greatly superior. When there seems to be so much desire to exalt the productions of the Colonies at the expense of home productions, it is needful to make an occasional bold stand in favour of our little Britain. How immensely the Pineapples grown by Mr. Coomber at the Hendre Gardens, Monmouth, excelled the sample Pines from the Colonies, whilst the bottled exhibits from Studley Castle, a really beautiful display, and from other bottlers, showed that in respect of the preservation of fruit in that way we can hold our own with any out-lander. It was very evident that much of the products from the warm Colonies will not become popular food elements with us, except in a manufactured state. Bananas, Oranges, and Lemons we can take in great abundance, but Sweet Potatoes, Yams, Melons, and some other products are inferior to home vegetables. *A. D.*

RETARDED LILIES OF THE VALLEY.—Lilies of the Valley are among the easiest and most satisfactory plants to retard in growth, that is, of course, to cultivate in cool chambers until the time comes when they are required to bloom. Among the best varieties for the purpose are *Convallaria majalis prolifica* (Vrengdenhill's Perfection), with large and open flowers, the finest known, and the Fortin variety, which does not force well. These two varieties are likely to be held more and more in favour, as also will the rose-coloured Lily of the Valley, which keeps its colour well in the cool chamber. Retarded Lilies are coming more and more into use; the flowers increase in size and perfume, and hence in commercial value. There seems no reason why they should not be crystallised with sugar for sweetmeats, as are the blossoms of Rosés, Lilacs, Oranges, Violets, Lavender, and other plants. *J. Vrengdenhill, Haarlem, Holland.*

SOFT ROT OF WHITE ARUMS.—Respecting your note on above (p. 410), this appears to be precisely the malady which attacked the Arums here four or five years ago, and about which I wrote to you at the time, eliciting some information which proved useful in locating the nature of the disease. I now write to say that my experience since is all in favour of the "light" theory now advanced. I give the corns a

thorough baking in the sun during the summer, and in place of growing and flowering them in a house facing west and rather shaded, I now give them all possible light throughout their growth, and scarcely ever see a symptom of the disease or the mite which accompanies it, unless for experiment's sake I put a few plants in more shaded quarters. I tried change of stock, but this did not alter matters, for the new became as badly affected as the old. This disease seems similar to that which causes the general failure with *Eucharis*. Grow these latter during the summer months in a large airy house instead of in hot stoves or pits, as suggested on p. 412 by Mr. Barnett, flower them once a year only, after some months of the above treatment and good flowers on healthy plants will be the result, with no fear of mite. I have advocated this practice with *Eucharis* for many years, and have never seen it fail when proper attention has been paid to the general treatment. *J. C. Tallack, Shipley Gardens, Derby.*

CUPRESSUS MACROCARPA.—We had four bullocks killed on this estate, it is supposed through eating *Cupressus macrocarpa*. Is it generally known that this Conifer is so deadly? *A. Gooden, Burton Park, Petworth.* [We think not. *Ed.*]

CARNATIONS FASCINATION AND ENCHANTRESS.—There is not the smallest doubt as to these being identical, and at several recent shows I have appealed to Messrs. Ambrose to cease offering Fascination as a new variety. A large number of the American varieties has been renamed by English growers. Here are a few of the best known: Enchantress = Fascination, Ethel Crocker = Royalty, The Marquis = Renown, G. H. Crane = Dazzler, and sometimes the paler scarlet American is offered under the same name. The newer ones are being served the same, and if plants are sold under the fictitious names confusion will be great. *W. J. Godfrey, Esmouth.*

CARNATION ENCHANTRESS.—My challenge to Mr. Ambrose is that he will exhibit at the next meeting of the Royal Horticultural Society, a dozen plants each in flower of Enchantress and of what he now states to be "our novelty" (i.e., Ambrose & Son's) "Fascination." Even a half-dozen plants of each will suffice. This is a very moderate request to make under the circumstances. This dozen of plants would assuredly do more than whole columns of assertion which carries no proof. *E. H. Jenkins.*

CARNATIONS GLACIER AND MRS. S. J. BROOKS.—Referring to Mr. Henry Butcher's note on p. 453, it would be interesting to know from what source he obtained his original stocks, as, if they were true to name, Mr. Butcher or anyone else should have little difficulty in distinguishing the one variety from the other. We think it is highly probable from Mr. Butcher's description of the plants that in naming the whole of them Mrs. S. J. Brooks he has done the correct thing. In order that your correspondent may have an opportunity of comparing the two varieties we should be pleased to show him the two varieties in flower at our nurseries at the present time, or should he be unable to pay us a visit we will gladly send him free of charge by post some flowers of both Mrs. S. J. Brooks and Glacier. We think we need hardly point out that if we had received the letter to which Mr. Butcher refers, it would have had the usual prompt attention that our correspondence receives, but unfortunately the Post Office is not infallible. *Wm. Cutbush & Son.*

THE BRITISH GARDENERS' ASSOCIATION.—It is a matter of considerable surprise to me that, so far as I am personally aware, a large percentage of the gardeners' societies do not seem to be taking advantage of the opportunity that is afforded them this session for an exceptionally interesting evening. I refer to the existence of the "B. G. A." Surely the programme which this body has set itself furnishes a topic of the most vital interest to all concerned in horticulture. I believe that in spite of the active

propaganda carried on by the Association, and the hearty reception that has been accorded it by the horticultural Press, many gardeners are to this day almost entirely ignorant of the true character and programme of the Association. Surely it is the duty of the gardeners' societies to enlighten them. Nothing can be more helpful to the solution of a problem or the advancement of a cause than free discussion. The gardeners' society with which I am connected has already devoted two evenings to consideration of the "B. G. A."—one last spring and one recently—with the result that many of our members have determined to do what they can for the common good, and are now members of the "B. G. A." At one of these meetings a collection was made for the cause. I believe that I am correct in stating that if a society can anticipate a sufficiently large meeting, and its meeting-place is not situated "too many miles from anywhere," the "B. G. A." will send a speaker specially to address it. In such a case it would, I think, be advisable to throw the meeting open to all local gardeners. Would not a meeting of this kind constitute quite the plum of the session, and in all probability occasion a considerable influx of new members to the promoting society? Many of the gardeners to whom I have spoken of the "B. G. A." have expressed their intention to join at the New Year. I sincerely hope that they and very many others will do so; and the hope will I am sure be echoed by all those who think with me that the average gardener does not quite get his deserts. *Excelsior.*

CAUSES OF LARCH DISEASE.—A good many foresters must have been surprised to read Professor Fisher's quotation from *English Estate Forestry* (December 3), a couple of weeks ago, to the effect that "whenever the Larch disease becomes really dangerous to the crop it is a proof of the locality being unsuitable to the Larch, or to the trees having been badly planted and tended." No doubt the disease is worse in some situations than in others, but if the above statement is true I think the whole of Great Britain may be set down as "unsuitable," for there is nothing more certain than that the disease becomes dangerous to the crop as soon as it appears, and no situation is safe from it, north or south. I could give numbers of instances where the original crops of Larch have been a success, but where all the younger crops have become diseased, planting, tending, and all the conditions being unaltered. One example may suffice. Judging from the size and health of the trees, and their cubic contents, running from 100 to 300 feet per tree, there is no more suitable situation than Dunkeld and the Tayside district about there, on the Duke of Athol's estate. Much of the Larch was felled to supply sleepers for the Highland Railway, but those left show what the crop was like. Yet when John McGregor, late head forester to the Duke of Athol at Dunkeld, was examined before the first Forestry Committee in 1887 about the Larch disease, he said he did not think there was a Larch plantation in Scotland of a certain age free from disease, and that it was unsafe to plant Larch extensively anywhere (Blue-Book). I am myself constantly seeing fine examples of old and sound Larch growing side by side with badly diseased young plantations, which effectually disposes of the unsuitable site idea. One might just as well say that the best Potato lands are unsuitable to the Potato because the disease attacks the crop on such lands as well as on others. Nature must have made a big mistake when it selected the Alps for the habitat of the Larch, for according to Hartig the disease began to spread from there all over the North of Europe. *J. Simpson.*

MARKETING FRUIT.—There are many things to be said in favour of local markets for fruit, &c., yet large growers must rely on the central markets for the sale of the bulk of their produce. A friend of mine who is a fruit-grower annually disposes of several tons of his fruit direct from orchard to the home with good profit. This year he sold Victoria Plums at 4s. lb. for 10s. 6d., carriage paid. He has worked up a large connection; but it must not be concluded this was done in a week; it has taken him several years.

Even in this case he is obliged to use a large market as a means of disposing of third-grade fruit. My friend has every year several hundred boxes made, and marked with his name and "From Gardens to the Home." These boxes are now returnable, which is much preferred. He issues a well-got-up price-list of fruit, and interspersed between items are photographs of his orchards and fruit-trees, which make the price-list very attractive. All Plums, Apples, and other fruits are carefully picked and graded, especial attention being paid to the packing, which he himself superintends. Boxes are nailed down and a label is attached on which is printed the name of fruit, the weight, and the date when picked. It is owing to this careful management that he has retained his old customers and greatly increased his connection. How different is the packing and grading of some growers, especially in the Vale of Evesham! I have assisted in weighing and packing many tons of fruit in that district, so am well acquainted with the methods employed. The fruit is picked by men, and as they are not paid by the day, the fruit and trees are not very carefully handled. After the tree is exhausted, any fruit on the ground is also added with the other; it is then taken up to the packing sheds. A hamper of fruit is then run over into an empty one. As fruit is running in, toppers are picked and placed in a basket by the side. It is only after the bottom half of the hamper is filled that undersized and bruised fruit are picked out; the toppers are placed on top, and the inferior and bruised picked out are then thrown into bottom of next hamper to be filled, to contaminate all surrounding fruit. Hampers of produce are despatched by goods train to the large markets. Once when in Birmingham Smithfield Market I saw a large heap of Victoria and Orleans Plums condemned as unfit for food; this was the result of careless packing and the placing of bruised fruit in the bottom. Topping with the best fruit accounts for many of the bad prices returned to growers; it also causes suspicion, which is inimical to the interests of the trade. There is little doubt that local markets would have a great tendency to check careless grading and packing, which finds no favour with the general public. In a shop at Yeovil I noticed several bundles of Asparagus, so I made inquiry as to whether they came from Evesham. The shopman informed me they formerly purchased from Evesham, but, owing to dishonest grading, they had been forced to get French Asparagus, as some of the Evesham bundles were composed of spruce in the middle and nice large buds on the outside. There is a market in Evesham, which is open three days in the week. Empties are let out at a low fee, which is a great convenience to small growers, as the expense incurred for empties is no inconsiderable item, and not easily met by such. I have seen hampers of fruit emptied in this market, and the unfair grading and packing exposed to view, which serves to show this dishonest practice would be completely stopped in time, for growers would see more plainly the evils of such an unwise system. Another great advantage reaped through local markets would be the immense relief given to our central largest markets, leaving more room for the supplies of our large growers. Better prices would be realised and gluts alleviated in a prolific season; also produce would be more evenly dispersed over the country. A question arises in my mind as to how growers in the country could profitably grow early Strawberries, Cucumbers, Tomatos, Beans, &c. The class who require such things early, living in the country, have an efficient staff of gardeners and well-equipped glasshouses and gardens. There are forwarding depôts for poultry, eggs, butter, milk, &c.; perhaps a company could be formed with branches which would undertake to find a custom in our large towns for all forced fruits and vegetables. I believe there is a market for fruit and vegetables at Highbridge, Somerset, run in conjunction with the produce of dairy-farmers. There is no doubt that markets instituted all over the country would prove a great boon to small fruit-growers and nurserymen; and let us hope the time is not far distant when such will be brought into action. *E. E. B. Welsh, Rayleigh.*

THE WEEK'S WORK

IN

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Newly imported plants of Dendrobium Wardianum—To Orchid cultivators of but limited experience, and others who have purchased recently imported plants of *Dendrobium Wardianum*, a few hints on their management may be helpful. It is not sound practice to attempt to force these plants into growth by subjecting them to a high temperature before natural and proper reaction sets in, neither is it advisable to syringe them with water, the effect of this being to cause rot and decay in the imported pseudo-bulbs, which are in a plump, healthy condition, also to weaken the young growths, which are thereby caused to start away prematurely. The plants should first be freed from all rubbish, decayed bulbs, and dead roots, and then be placed in the smallest pots it is possible to get them in. I prefer the ordinary flower-pot with several holes around the rim, so that suitable wire handles may be attached, and the plants suspended from the roof. Fix each plant firmly into the pot, and use nothing but clean crocks, making the plants quite firm by tying a few of the pseudo-bulbs to the wires, and as the plants have a decidedly pendulous character, it is advisable to allow them to remain so. It may be inconvenient or undesirable to some cultivators to grow the plants in this way, and they may wish to have them in an upright position, then the long stout pseudo-bulbs should be securely tied to strong neat stakes, it being very important when the plants begin to grow that each should have a firm root-hold. Place the plants in a moderately cool and dry atmosphere, and afford no water unless the pseudo-bulbs show signs of excessive shrivelling, when water may be poured through the crocks occasionally. It is not necessary to afford any compost to these *Dendrobiums* immediately growth commences, but to wait until new roots begin to push out from the base of the young growths; when this has occurred the plants may be potted in the ordinary manner and gradually inured to greater warmth.

Plants of Cattleya labiata Warneri that are now starting into growth should be elevated well up to the light at the warmer end of the house, and until the plants open their flowers, water in sufficient quantities to keep the compost fairly moist should be afforded. Repotting should be done after the flowers fade, as at that time numerous young roots push out from the base of the flowering pseudo-bulb.

Lælias and Vanda.—*L. anceps* is in flower, also *L. albida*, *L. autumnalis*, and its almost pure white form, *L. a. alba*. When these plants have done flowering, very little water is needed to keep the pseudo-bulbs fresh and plump; damping between the pots should be discontinued while the plants are at rest, and fresh air, varying in degree according to the external conditions, should always be afforded. The proper time to repot or afford fresh rooting material to these *Lælias* is when they commence to show new roots. The best place for these Mexican *Lælias* is where the night temperature is kept at about 55°, and the atmosphere of the house is comparatively dry. In this house *Vanda Amesiana* is also in flower. The plants should be kept without water at the root, and the flowers, which are very sweetly scented, will last a long time in good condition. Its congeneric species, *V. Kimballiana*, now at rest, should receive similar treatment until root action commences.

Calanthes.—As varieties of the vestita section pass out of flower, the plants should be placed on a shelf in a dry atmosphere close to the roof of the warm house, where the light will assist to mature the pseudo-bulbs. Water must be entirely withheld till after the plants are repotted in the spring.

SOCIETIES.

NATIONAL CARNATION AND PICOTEE.

THE date fixed for the exhibition for 1905 is Tuesday, July 18, and not July 8, as was stated on p. 455.

CHESTER PAXTON.

JUDGING from the Annual Report, which was submitted by the Hon. Secretary, Mr. G. P. Miln, at the annual general meeting recently held in the Grosvenor Museum, this popular Society is in a very flourishing condition. The list of members and subscribers had increased during the year by nearly fifty names, the total numerical strength now being 543. It was also shown that the recent exhibition of fruits and Chrysanthemums had proved to be the most successful in the history of the Society, the entries far exceeding those of any previous year, the profit being considerably greater than that realised at any former show. After meeting all liabilities, the Committee were enabled to carry forward a balance of over £80 towards next year's account. The retiring officials were cordially thanked for their past services, after which Major MacGillycuddy was re-elected President, and Mr. T. Gibbons Frost, Mollington Banastre, and Mr. J. Garrett Frost, Boughton Hall, Vice-Presidents. The duties of Secretary and Treasurer were again undertaken by Mr. G. P. Miln. A vote of thanks was accorded to Mr. R. Newstead for his kindness in acting in the capacity of Consulting Naturalist, an office which he agreed to undertake for another year. Mr. N. F. Barnes was unanimously re-elected Chairman of Committee. It was decided to hold an exhibition of spring flowers in the Town Hall some time in March or April, and the annual exhibition of fruits and Chrysanthemums on November 15 and 16 next.

MARKETS.

COVENT GARDEN, December 28.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralias, per doz.	8 0-12 0		Ferns in var., per		
Azaleas ...	3 0-3 6		doz.	...	3 0-12 0
Arbor Vitæ, doz.	8 0-18 0		Ficus elastica, per		
Aspidistras, doz.	18 0-36 0		dozen	...	9 0-24 0
Aucubas, per doz.	4 0-8 0		Hyacinths, Dutch,		
Azalea mollis, pot,			per dozen	...	12 0-15 0
each	5 0		Marguerites, doz.	...	6 0-10 0
Begonia Gloire de			Narcissus, Trum-		
Lorraine, pr. doz.	8 0 12 0		pet, per doz.	...	9 0
Bouvardias, pots,			Orange-trees, each	...	2 0-15 0
per doz.	...	4 0	Palm, variety,		
Callas, per doz.	...	12 0-15 0	each	...	3 0-20 0
Chrysanthemums,			Poinsettias, per		
per dozen	...	6 0-18 0	dozen	...	8 0-10 0
Cocos	...	12 0-18 0	Primulas	...	4 0-5 0
Crotons, per doz.	...	12 0-24 0	Pteris tremula, p.		
Cyclamen	...	10 0-12 0	dozen	...	4 0-8 0
Cyperus, per doz.	...	3 0-4 0	Roman Hyacinths,		
Dracenas, variety,			per box	...	3 0
dozen	...	6 0-18 0	Solanums, dozen	...	4 0-8 0
Ericas, per dozen	...	12 0 18 0	Tropæolum, doz.	...	3 0-4 0
Euonymus, vars.,			Tulips, red and		
per dozen	...	4 0-10 0	white, per box	...	2 0-3 0

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Anemones, per			Marguerites, yellow,		
dozen	...	2 0-4 0	12 bunches	...	2 0-3 0
Azalea mollis, per			Mimosa (Acacia),		
bunch	...	1 8	packet	...	1 0-1 6
— white, p. doz.	...	4 0	Narcissus p. doz.	...	2 0-3 0
Bouvardias, per			— Soleil d'Or, per		
dozen	...	4 0-6 0	dozen	...	3 0-4 0
Callas, per doz.	...	4 0-6 0	Orchids, various,		
Camellias	...	1 6-2 0	per dozen	...	2 0-8 0
Carnations, doz.	...	9 0-60 0	— Cattleyas	...	6 0-12 0
bunches	...	9 0-60 0	Pancratiums, per		
— specials, per			dozen	...	3 0-4 0
bunch	...	3 0-5 0	Pelargoniums,		
Chrysanthemum,			zonal, dozen	...	4 0-8 0
p. doz. bunches	...	4 0-24 0	— white, dozen	...	4 0-6 0
Croton leaves	...	1 6 2 0	bunches	...	4 0-6 0
Daffodils, per doz.	...	5 0-8 0	— double scarlet,		
Eucharis, doz.	...	3 0-4 0	per doz. bun.	...	6 0-8 0
Ferns, Asparagus,			Poinsettias, per		
per bunch	...	0 6-1 6	doz. bunches	...	6 0-9 0
— French, doz.	...	0 3-0 4	Roman Hyacinths	...	6 0-12 0
— Maidenhair,			Roses, Mermet,		
doz. bunches	...	4 0-8 0	per bunch	...	2 0-5 0
Foliage, various,			— red, bunch	...	5 0-6 0
dozen bunches	...	2 0-4 0	— white, bunch	...	2 0-4 0
Freesia, dozen	...	3 0-1 0	— pink, bunch	...	4 0-5 0
Gardenias, p. box	...	2 0 3 0	— Safran, bunch	...	1 0-1 6
Honesty, bunch	...	2 0	— Sturise, bun.	...	1 0-1 6
Lilac, French	...	3 0-4 0	Smilax, 12 bunch.	...	1 6-3 0
Lilium anatum			Tuberose, on		
per bunch	...	2 0-3 0	stem, bunch	...	0 9-1 0
— Harrisii, per			— short, p. doz.	...	0 2-0 4
bunch	...	3 0 4 0	Tulips, per bunch	...	1 0
— lancifolium	...	1 0-2 6	Violets, doz. bun.	...	1 0-2 0
Lily of the Valley	...	6 0-12 0	— Parma, bun.	...	2 0-3 6

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per dozen...	5	0	Lettuces, Cabbage, per dozen...	0	9-10
— Jerusalem, sieve ...	1	0	Mushrooms (house) per lb. ...	0	6-09
Beans, dwf., p. lb. 1 0-16			Onions, pickling, per sieve ...	3	6-46
— Madeira, bskt. 1 6-20			— per bag ...	8	6-100
Beetroot, bushel 1 0-16			— per case ...	9	0
Brussels-Sprouts, sieve ...	1	0-13	Parsley, per doz. bunches ...	1	0
Cabbages, Italy ...	2	0-26	— sieve ...	0	9
Carrots, per doz. bunches ...	2	0	Parsnips, per bag 2 6-30		
— bag ...	2	6-30	Potatoes, per ton 60 0-1000		
Cauliflowers, doz. 2 1-26			Radishes, per dozen bunches 1 0		
Celeriac, per doz. 2 3			Rhubarb, York., per dozen ...	1	6-20
Celery, per dozen bunches ...	3	0-120	Salad, small, punnets, per doz. ...	0	9
Cress, doz. pun. 0 9			— Scakale, per doz. 8 0-100		
Cucumbers, doz. 12 0-150			Shallots, p. sieve 4 0		
Endive, per lb. 1 6			Spinach, p. bush. 2 6-30		
Garlic, per lb. 0 3			Turlops, doz. ...	0	1-16
Horseradish, foreign, p. bunch 0 10-10			— bag ...	1	6-20
Leeks, per dozen bunches ...	1	0-16	Watercress, per dozen bunches 4 0		
Mint, per dozen 3 0					

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, per bushel ...	1	6-50	Grapes, Gros Colmar, p. lb. 0 10-12		
— English, sieve or half bushel ...	1	0-36	— Muscat, A, per lb. ...	3	0-50
— per barrel 11 0-300			— B, per lb. ...	1	6-20
— per case ...	12	6-146	— Alcaote, p. lb. 0 6-10		
Bananas, bunch 7 0-100			Lemons, per case 9 0		
— loose, dozen 1 0-16			Lyches, per box 1 6		
Chestnuts, per bag ...	10	0-156	Oranges, per case 12 0-300		
Cobnuts, per lb. 0 4-04			— Jaffa, per box 10 0		
Grape-Fruit, case 10 6			— Jamaica, box 10 0		
			Pears, per case ...	8	6-126
			Pines, each ...	2	6-46
			Walnuts, per bag 23 6		

POTATOS.

Dunbars, 90s. to 95s.; various, home-grown, 50s. to 70s. per ton. John Bath, 32 & 34, Wellington Street, Covent Garden.

COVENT GARDEN FLOWER MARKET.

THE Christmas trade finished fairly satisfactorily. During the first part of the week up till Thursday the fog prevented anything like ordinary trade being done, but with improved weather to-day business for both flowering plants and cut bloom is quite brisk, although foliage plants are in little demand. The best plants of Azalea indica were sold early, others not so well flowered remained on hand at the close of the market. Some good Azalea mollis are seen. Cyclamen sold at slightly advanced prices. Poinsettias were over-plentiful, the cold weather influencing buyers against their sale. Cinerarias, the first I have seen this season, were obtainable, and were well grown. Callas in pots were plentiful, but high prices were maintained. Begonia Gloire de Lorraine was in demand, but the fog early in the week proved very disastrous to these plants. Primula sinensis has been better this season than last, but even now they are not up to those seen a few years ago. Primula obconica in well-flowered plants is still seen. Solanum capsicastrum is fairly plentiful, the best plants realising good prices. Good yellow trumpet Daffodils are seen. Hyacinths in red, white, and pink colours are good, these are mostly grown three plants in a pot. Roman Hyacinths in boxes are plentiful, also supplies of Tulips in boxes, especially red varieties, the average prices for which approximate 1s. per dozen, while for "whites" 1s. 6d., and for "yellows" 2s. is obtainable for the best samples, but many are sold at lower prices. Orange-trees bearing fruit realise from 2s. 6d. to 15s. each, according to size and number of fruits on plants. Ericas sold well, hyanalis, gracilis, and melanthera are the varieties seen. Marguerites were good, but did not sell freely. Chrysanthemums continue plentiful, many of the plants were rather far advanced. A few Geuistas were seen, but they are not yet good. Some plants of Spiraea (Hoteia) japonica are seen, also Lilium Harrisii, and Lily of the Valley. Ferns, Palms, and other foliage plants are plentiful. Pandanus Veitchii in well-coloured plants make about 30s. per dozen in 18-sizd pots. Maranta Veitchii and M. Mackayana are seen, but they do not sell readily. Hardy Conifers and other shrubs are plentiful, but there is a very limited demand for them.

CUT FLOWERS.

Chrysanthemums hold out well, but much of the bloom has been far advanced and sold at low prices; the best blooms, however, sold well. Good crimson, pink, and yellow varieties made better prices than "whites." Bronze varieties also sold well. Callas were plentiful, for which prices were somewhat higher. Lilium longiflorum varied in price; for best quality flowers there was an advance. Spiraea japonica, Azalea mollis, and Lily of the Valley were plentiful, and equal to all demands. Tuberoses on stems only made ordinary prices. English forced Lilac, also flowers from retarded plants and French, was plentiful. Of Orchid bloom, the best Cattleya labiata were making 12s. per dozen, but there were other samples selling at a much lower price. Dendrobium flowers are now coming in. Odontoglossum crispum and several sorts of Cypri-

pedium are seen. Yellow Marguerites (mostly imported) are plentiful, also Narcissus. Mimosa (Acacia) from France is now much better in quality, and sells well. Blue Violets have been cheaper, but prices are maintained for Parmas. Imported Roses and Carnations have been plentiful. Best English Roses have sold well; Carnations have also sold well. Bouvardia, white Azaleas and Roman Hyacinths are all plentiful. Cut Poinsettias are sold at low prices, the supply was cut more than equal to all demands. Helloborus niger did not make such good prices as usual. All kinds of cut foliage has been plentiful. Trade, judged from all points, has not been bad, especially when one considers the state of the weather. It was a surprise to see so many vans in the market on Thursday morning. Some salesmen who should have reached London on Wednesday night at 11 o'clock did not arrive until 4 o'clock on Thursday morning. J. H., Covent Garden, December 24, 1904.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending December 24, 1904.

1904.		TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.			TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.
DECEMBER 15 TO DECEMBER 24.	At 9 A.M.		DAY.		LOWEST.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.					
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.									
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.		
MEANS	32	32	36	30	29	41	43	46	0.07	3	30		

Remarks.—From the 21st until the 24th inst. the anemometer was frozen, and no further movement took place. On the 19th and 24th inst. there was fog.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Dec. 24, is furnished from the Meteorological Office:—

"The weather during this week was characterised by a dense fog or thick mist that came over the greater part of England early in the period, and continued with little intermission until its close. At many of the English coast stations, however, especially in the south-east, the days were very sunny until nearly the end of the period. In Ireland and Scotland there was little or no fog, but the sky was generally very cloudy or over-cast."

"The temperature varied greatly. In England it was below the mean, the deficit ranging from only 1° in England, S., to 5° or 6° in England, N.E., and the Midland Counties, and to 7° in England, N.W. In the north and east of Scotland, the south of Ireland, and the Channel Islands it was above the mean—as much as 5° in Scotland, N., in Ireland, N., just equal to it, and in Scotland, W., 2° below it. The highest of the maxima were recorded very early in the week, and ranged from 57° in Ireland, S., to 56° in Scotland, W. Later in the period the daily maxima over the centre and north of England were often below 32°. The lowest of the minima, which occurred during the latter half of the time, ranged from 13° in England, S.W. (at Llangamarch Wells), 18° in England, N.E., N.W., and the Midland Counties, and 19° in England, S., to 28° in Ireland, S., 32° in the Channel Islands, and 34° in Scotland, N."

"The rainfall was less than the mean in all districts; in most parts of the kingdom the fall was scarcely appreciable."

"The bright sunshine exceeded the mean in the north-east, east, and south-west of Great Britain, and also in the Channel Islands, but was deficient elsewhere. The percentage of the possible amount was greatest (31) in the Channel Islands, and least (7) in Scotland, N."

THE WEATHER IN WEST HERTS.

Most Exceptionally Calm.—Throughout the past nine days the temperatures have remained low, both during the daytime and at night. The days, however, proved more unseasonably cold than the nights, the highest reading in the thermometer-screen at no time exceeding 38°, and on two successive days reaching only 30°, or 2° below the freezing-point. On the coldest night the exposed thermometer registered 14° of frost, a by no means exceptionally low reading for the time of year. At 2 feet deep the temperature of the soil is now about 5°, and at 1 foot deep about 4° colder than is

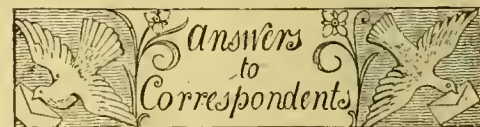
seasonable. Rain fell on only one day during the week, and even then the amount deposited proved insignificant. No rain-water at all has come through the percolation-gauge covered with short grass for over a week, and no measurable quantity through the bare soil gauge for the last three days. Five days of the week proved altogether sunless, the total record of sunshine for the remaining two days amounting to 3½ hours. The most remarkable feature, however, has been the unusual calmness of the atmosphere. Taking the whole week, the mean rate of movement of the air was less than half a mile an hour, while on one day an absolute calm prevailed throughout the whole of the twenty-four hours. This is the first day on which no movement of the air at all has been recorded here since my Berkhamsted observations commenced, nineteen years ago. On two other days during the week the total velocity was respectively only two miles and one mile, both of which are, with but two exceptions, calmer days than any previously recorded in the same nineteen years. Owing to the prevalence of thick fog the atmosphere continued excessively damp throughout the week, the mean amount of moisture in the air at 3 P.M. being as much as 13 per cent. in excess of a seasonable quantity. E. M., Berkhamsted, Dec. 27, 1904.

[For actual temperature and condition of barometer at time of going to Press see p. 462.]

ENQUIRIES.

Is there any authority for the common statement that the Alexandrian Laurel, Danie (or Ruscus) racemosus, provided the crowns for the Olympian victors? E.

POLYGONUMS.—Will some reader of the *Gardeners' Chronicle* inform me whether P. multiflorum has flowered in this country? I have a plant that has made growths 8 to 10 feet high, but has shown no signs of flowering. I have grown P. Baldschuanicum ever since it was sent into commerce and it has never failed to flower. H. M.



BOOKS: Pomum. There is not a new edition of Hogg's Fruit Manual.

EMIGRATION TO CANADA: Pomum. Apply to the offices of the Canadian Government, at Charing Cross, London, S.W.

NAMES OF FRUITS: J. C. G. 1, Betty Geeson; 2, Flower of Kent; 3, Stone Pippin (Norfolk); 4, Striped Beefing.—Southport. We do not recognise your Apples; it is a very nicely flavoured fruit.—W. H. S. 1, Deux-Ans; 2, Northern Greening; 3, Fearn's Pippin; 4, Kedleston Pippin; 5, Ashmead's Kernel; 6, Alfriston.—J. O. Edwards. King of the Pippins.

PEAR DISEASE: J. S. Your Pear shoots are attacked with the Fusicladium, which causes cracking of the fruit, with the Nectria which causes canker, and apparently with the eggs of the Lackey-moth. Prune the shoots hard back, burn them, and wait.

SEAKALE: W. H. This vegetable is sent to market in punnets, each punnet containing about twelve heads, fewer or more according to size, but generally weighing about 2 lb. The roots that have been forced hard may be thrown away, as other stock is much better.

VINES: H. R. E. It is very natural that your new employer should wish to have fruit as well as leaves from his Vines. From the circumstances you have described, we think it very unlikely that anything short of making a new border and replanting with young Vines would be satisfactory. If it is undesirable to take on the Vines this season, one half of the border might be done, and when the young Vines have established themselves in this, treat the remaining half similarly. For directions for making the border refer to the remarks on p. 461, under "Fruits under Glass."

COMMUNICATIONS RECEIVED.—O. T.—J. G. Lemmon, California—D. Thomson—W. H.—W. Fyfe—W. H. C.—F. Jordan—O. Thomas—F. M.—Exhibitor—K. H.—Japan—Rev. D. R. Williamson—W. J. G.—J. O'B.—Expert—B. W. G.—A. S.—F. C. L.—T. P.—G. H.—G. Woodward.



VIEW OF THE POND IN THE GARDENS AT WITHNELL FOLD, NEAR CHORLEY, LANCASHIRE,
THE RESIDENCE OF H. T. PARKE, ESQ.

